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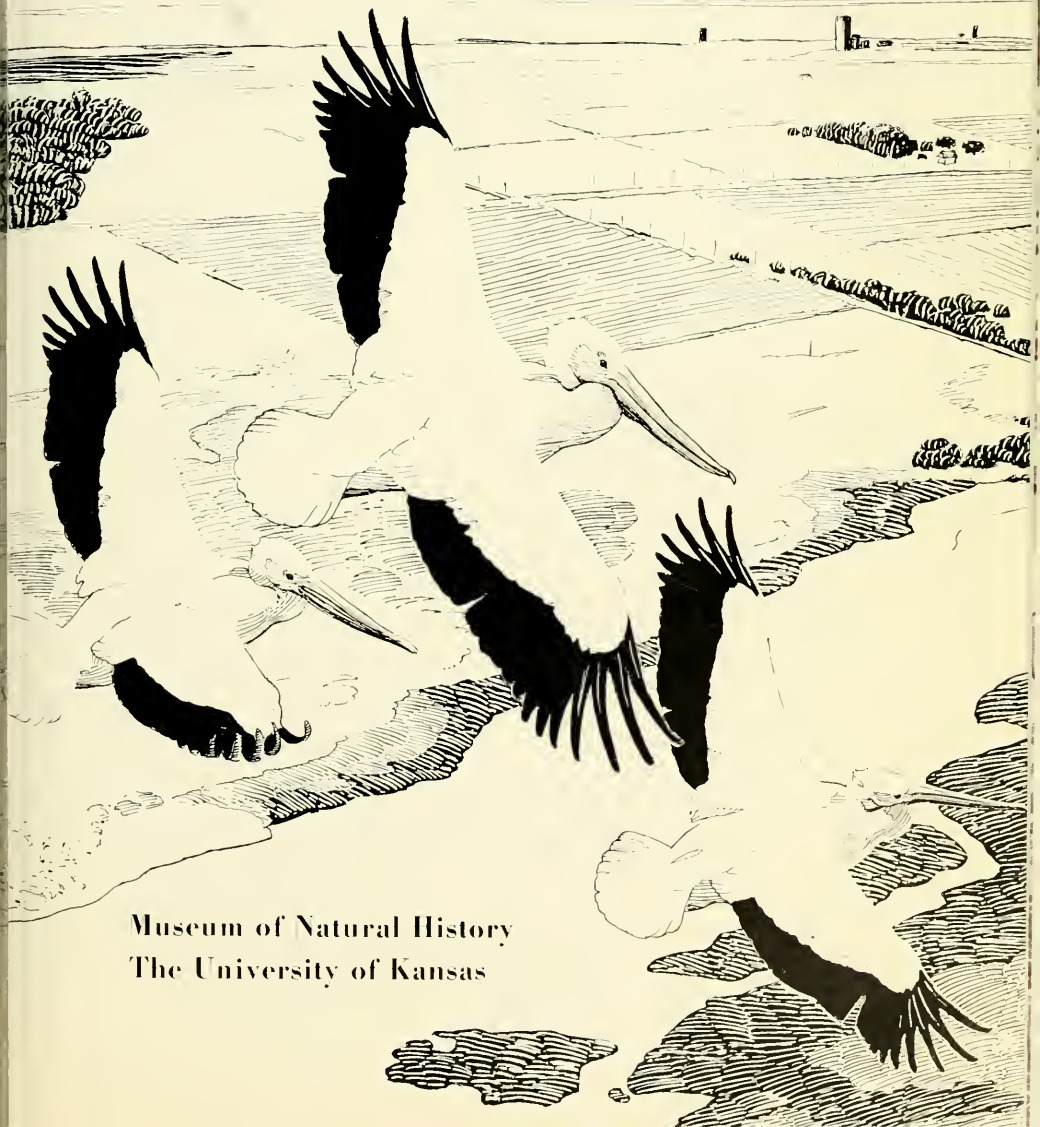

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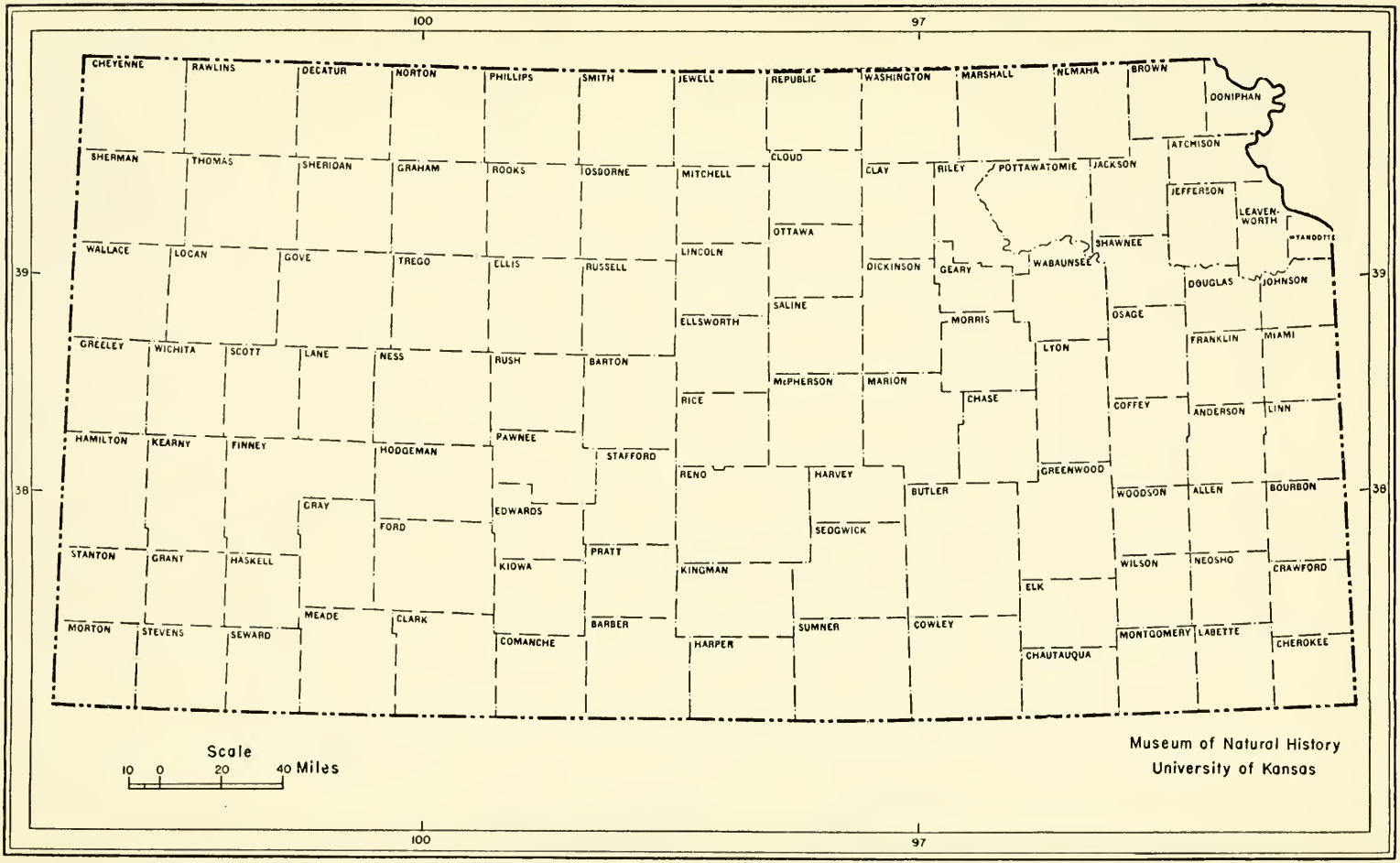

FIG. 1. Map of Kansas showing names of counties.

A Directory to the Birds of Kansas

BY

Richard F. Johnston

MUSEUM OF NATURAL HISTORY
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A Directory to the Birds of Kansas

BY RICHARD F. JOHNSTON

Kansas has a mid-continental position in North America and this is reflected in the composition of the bird fauna of the state. Nearly half of all North American birds have been recorded here. Yet, for only one major set of habitats is there a full expression of numbers and kinds of birds, and those are the grassland habitats. Almost three-quarters of all North American grassland birds actually breed in Kansas (Johnston, 1964), and practically all occur if non-breeders are counted. Other kinds of birds are not nearly so well situated ecologically, and as a consequence numbers and kinds of woodland, marsh, and desert birds are relatively low.

It is true, however, that individuals of species occurring chiefly elsewhere do happen into Kansas, and some of these are found by people looking for them. Thus, such diverse species as the Groove-billed Ani and Snow Bunting occur in Kansas, as do the Steller Jay and Cerulean Warbler, although not at the same times and places. The possibility of uncovering new information on distribution always lends some excitement to work with birds in Kansas, and nearly one species new to the state is added to the total per year. Since the time of Long (1940) thirty-one species have been added to the state list, and since Tordoff (1956) eight species have been added. There are even better possibilities with breeding birds—some eleven have been added since Tordoff wrote.

At present 383 species of birds are known to have occurred at least once in Kansas; documentation in each instance is in the form of a specimen. One hundred eighty-four of these species are known to breed in Kansas (or to have bred in the past). The present account deals with the entire avifauna, but readers who want a more extended treatment of the breeding birds of the state will find it in other places (for example, Johnston, 1964). Here information is organized as follows: name of species, status, gross habitat and sector of the state in which the species occurs, dates of migratory movement, if any, number of eggs, dates of egg-laying, subspecific affinity if any of the populations found in Kansas and a

reference to a more detailed account of the species and its natural history. These matters are presented in telegraphic style and only two points require further comment.

First, dates for migratory movement are given as a range and a median. Hence, reference to, "Spring arrival March 22-April 17 (April 9)," gives the span of first dates of observation for a series of years and, in parentheses, the date prior to and after which an equal number of first yearly records were secured.

Second, dates for the egg-laying season are given as a range and a mode. Hence, reference to eggs laid "April 11-July 10 (May 15)," gives the span of egg-laying dates and, in parentheses, the date on which most egg-laying has occurred.

Bird Habitats in Kansas

For a variety of reasons students of birds like to know about the habitat distribution of birds of an area. The preference for a given type of habitat is indicated for each species in the general accounts below but, in this section the data are briefly summarized for resident species. The term "resident" is here applied to a "permanent resident," a "summer resident," or a "winter resident." These resident species spend more than a few days or weeks in one general locality, staying for months under average circumstances. Accordingly, summer residents, winter residents, and permanent residents, in the aggregate numbering 234 species, have a status considerably different from that of the transients.

If these resident species are analyzed as to their seeming habitat preferences, a significant ecologic distribution is seen. This distribution is evident in Table 1, in which birds are sorted into habitats of woodland aspect, grassland aspect, limnic aspect, and xeric scrub aspect. Slightly more than half the species are birds of woodlands of various kinds. These, in Kansas, include eastern deciduous forest woodlands, riparian woodlands, and blackjack oak woodland. The 131 species represent 58 per cent of all North American woodland bird species.

A little more than one-fifth of the species are limnic birds, found near water (rivers, streams, lakes, marshes, and saline flats periodically flooded). The 53 species represent 59 per cent of all North American limnic bird species.

About 15 per cent of the sample is of grassland birds, those associated with tall-grass and short-grass prairies and any of the mixed

grassland associations of the eastern sectors. The 35 species represent 97 per cent of the birds of North American grasslands, which is a profound comment on the scope of Kansas grasslands.

Birds of xeric scrub amount to two per cent of the residents or 14 per cent of the North American xeric scrub species.

The total of 234 species is 37 per cent of all North American birds and 58 per cent of the North American species included in the five categories of Table 1.

TABLE 1.—ECOLOGIC ANALYSIS OF THE BIRDS OF KANSAS *

	Permanent residents	Summer residents	Winter residents	Total residents
Woodland species	40: 30%	65: 50%	26: 20%	131: 56%
Limnic species	2: 40%	37: 70%	14: 26%	53: 22%
Grassland species	8: 23%	15: 43%	12: 34%	35: 15%
Xeric species	2: 40%	2: 40%	1: 20%	4: 2%
Unanalyzed species	3: 27%	8: 72%	0	11: 5%
Total	55: 23%	127: 55%	53: 22%	234: 100%

* Omitting transient-only species.

Probable History of the Birds of Kansas

Three species, the Ring-necked Pheasant, House Sparrow, and Starling, have known histories in Kansas and the Western Hemisphere. They were brought by man to the Americas from stocks long native to Eurasia and released at various places in the latter part of the Nineteenth Century. For the remaining 380 species we have indirect evidence concerning their history. Mayr (1946; 1963) has summarized the evidence and drawn inferences concerning past distribution and ultimate origin of the birds of North America. This material, in turn, has been summarized and recast for breeding species of the Kansan avifauna (see Table 2).

Briefly, the birds of Kansas probably stem from three main evolutionary stocks: of the breeding birds 44 per cent are North American, 16 per cent are Eurasian, and 8 per cent are South American. Each species of course has its own special adaptations to life in this region, but in spite of fundamental differences certain generalities are evident. For instance, most New World species are migrants with respect to Kansas, and most Old World species are residents; more than four-fifths of all Old World and South American species are of woodland habitats, but less than three-

fourths of the North American species show this affinity; more than four times as many grassland species stem from North American precursors as from Eurasian and South American precursors combinded.

Although these abstractions apply to groups of birds, and have no more validity than the groups may have, such summary statements can provide us with convenient insight concerning how and why a species lives as it does. The differing migratory time schedules in Kansas of flycatchers, swallows, and swifts are partly a reflection of the ancestries of the birds, and occur in spite of the basic adaptation to use of flying insects as food. Likewise, the differing ancestors of seed-eating birds are partly evident in the way each uses seeds, in the places in which each seeks seeds, and the times at which each occurs in the state.

Table 2.—Analysis of Ecologic Groups of Breeding by Presumed Area of Evolutionary Origin *

Ecologic Unit	Total	General area of origin			Unanalyzed
		Old world	North American	South American	
Woodland species...	101 spp	22%	53%	14%	11%
Limnic species.....	36	0	14%	0	86%
Grassland species...	23	9%	56%	3%	30%
Xeric scrub species..	3	0	100%	0	0
Unanalyzed species	11	26%	26%	0	48%
Total.....	174	16%	44%	8%	22%

* Modified after Johnston, 1964:582, 583.

Materials

Sources of information for the following accounts are varied. Specimens, chiefly in the Museum of Natural History, are the largest single source of the kinds of information used here. The files of the Kansas Breeding Bird Survey, administered by the Kansas Ornithological Society, were used extensively, as were the breeding records in the files of the Department of Biology, Kansas State Teachers College, Emporia, administered by Dr. David F. Parmelee. Dates of arrival and departure were taken from several sources: specimens in the Museum of Natural History, records in the literature, chiefly in the Bulletin of the Kansas Ornithological Society, and field notes of many persons throughout Kansas. Chief among

them are Mrs. Eunice Dingus, Mr. L. B. Carson, Mr. Carl Holmes, Mrs. Elizabeth Cole, Mr. Orville Rice, and Mrs. Mary Louise Myers.

Accounts of Species

Common Loon: *Gavia immer* (Brünnich).—Uncommon transient on lakes and rivers. Present northeast March 11-June 22, August 7-December 8, but December 16 in Cowley County.

Olson, S. T. and Marshall, W. H. (1952), The common loon in Minnesota. Minnesota Mus. Nat. Hist. Occasional Papers, 5:vi + 77 pp.

Red-throated Loon: *Gavia stellata* (Pontoppidan).—Rare transient, October-May, on lakes and rivers. One specimen (KU 36238): Marais des Cygnes River, near Ottawa, Franklin County, October 20, 1925.

Red-necked Grebe: *Podiceps grisegena* (Boddaert).—Rare transient, September-October, on lakes and rivers. One specimen (KU 7697): Kansas River east of Lawrence, October 29, 1910. *P. g. holboellii* (Reinhardt) occurs in Kansas.

Horned Grebe: *Podiceps auritus* (Linnaeus).—Uncommon transient, on ponds, lakes, and rivers. Specimens only from Barber, Riley, and Douglas counties. Spring arrival February 24-April 21 (April 9), departs by May 19; autumnal arrival August 31-October 6 (September 4), departs by November 30. *P. a. cornutus* Gmelin occurs in Kansas.

Eared Grebe: *Podiceps caspicus* (Hablizl).—Uncommon but regular transient, on ponds, lakes, and rivers. Spring arrival April 5-30 (April 19), departure May 17-June 12 (May 27); arrives autumn July 26-October 17 (September 16), departs by December 7. *P. c. californicus* (Heermann) occurs in Kansas.

McAllister, N. M. (1958), Courtship, hostile behavior, nest-establishment and egg laying in the eared grebe (*Podiceps caspicus*). Auk, 75:290-311.

Western Grebe: *Aechmophorus occidentalis* (Lawrence).—Rare transient and possible summer resident, on lakes and marshes; more common in west than in east. Dates of passage May 7-22, October 14-November 22.

Lawrence, G. E. (1950), The diving and feeding activity of the western grebe on the breeding grounds. Condor, 52:3-16.

* **Pied-billed Grebe:** *Podilymbus podiceps* (Linnaeus).—Common transient, local summer resident, on marshes, ponds, lakes, ditches, and rivers. Dates of passage March 1-April 13 (March

21), October 13-November 18 (October 24); may be seen any date. Eggs (4-10) laid May 1-June 30 (May 15). *P. p. podiceps* occurs in Kansas.

Glover, F. M. (1935), Nesting ecology of the pied-billed grebe in northwestern Iowa. Wilson Bull., 65:32-39.

White Pelican: *Pelecanus erythrorhynchus* Gmelin.—Common transient, near lakes, marshes, and rivers. Dates of passage March 25-April 27 (April 8) in spring, September 24-November 22 (October 13) in autumn.

Brown Pelican: *Pelecanus occidentalis* Gmelin.—Vagrant. One specimen (KU 10468): Parker, Linn County, June, 1916; one seen Sedgwick County, April 25, 1910 (Isely, 1912:42). *P. o. carolinensis* Gmelin occurs in Kansas.

* **Double-crested Cormorant:** *Phalacrocorax auritus* (Lesson).—Uncommon, regular transient, local summer resident, around lakes and rivers. Dates of passage February 21-May 24 (April 26) in spring, September 7-December 15 (October 7) in autumn. Has nested Barton and Phillips counties, in the latter at least from 1959 to 1963 (Parmelee and Stephens, 1963). Eggs (3-4) laid late April-May. *P. a. auritus* occurs in Kansas.

Bartholomew, G. A. (1943), Contests of double-crested cormorants for perching sites. Condor, 45:186-195.

Olivaceus Cormorant: *Phalacrocorax olivaceus* (Humboldt).—Vagrant. One specimen (now lost): 4 miles south Lawrence, Douglas County, April 2, 1872, identified by S. F. Baird and R. Ridgway. *P. o. mexicanus* (Brandt) occurs in Kansas.

Anhinga: *Anhinga anhinga* (Linnaeus).—Rare post-breeding visitant. Several specimens and sight records, most recently from Barton County (Tordoff, 1956:311). *A. a. leucogaster* (Vieillot) occurs in Kansas.

Allen, T. T. (1961), Notes on the breeding behavior of the anhinga. Wilson Bull., 73:115-125.

Magnificent Frigate-bird: *Fregata magnificens* Mathews.—Vagrant. One specimen (Goss, 1891:47): North Fork Solomon River, Osborne County, August 16, 1880. *F. m. rothschildi* Mathews occurs in Kansas.

Murphy, R. C. (1936), Oceanic birds of South America. Amer. Mus. Nat. Hist., New York, xxii + 1245 pp.

* **Great Blue Heron:** *Ardea herodias* Linnaeus.—Common transient and summer resident near marshes, rivers, and streams; abundant in Flint Hills. Arrives February 4-April 8 (March 20) in

spring, departs October 10-November 29 (October 23) in autumn; few overwinter. Eggs (4) laid March 1 to April 30 (April 5). *A. h. herodias* occurs in northeastern, *A. h. wardi* Ridgway in southeastern, and *A. h. treganzai* Court in western, Kansas.

Andrews, T. F. and Stephens, H. A. (1956), Colonies of great blue heron (*Ardea herodias*) in Kansas. Trans. Kansas Acad. Sci., 59:279-308.

* **Green Heron:** *Butorides virescens* (Linnaeus).—Common transient and summer resident about streams, lakes, and marshes. Arrives March 29-May 4 (April 27) in spring, departs September 1-October 30 (September 9) in autumn. Eggs (3) laid April 21-June 20 (May 5). *B. v. virescens* occurs in Kansas.

Meyerriecks, A. J. (1960), Comparative breeding behavior of four species of North American herons. Publ. Nuttall Ornith. Club, 2:viii + 158 pp.

* **Little Blue Heron:** *Florida caerulea* (Linnaeus).—Postbreeding summer visitant in state, rare summer resident in southwest, about marshes, lakes, and rivers. Recorded April, May, July, August, September. Nested summer 1952, 6 miles north, 4½ miles west Garden City, Finney County (Tordoff, 1956:312). *F. c. caerulea* occurs in Kansas.

Meanley, B. (1955), A nesting study of the little blue heron in eastern Arkansas. Wilson Bull., 67:84-99.

Cattle Egret: *Ardeola ibis* (Linnaeus).—Low-density colonizer at present, around wetlands and prairies. One specimen (Pottawatomie County, April 26, 1964; Zimmerman, 1964), but species destined to become conspicuous breeding bird in state; many sight records since 1962. *A. i. ibis* occurs in Kansas.

* **Common Egret:** *Casmerodius albus* (Linnaeus).—Postbreeding summer visitant, local summer resident, near streams and marshes. Recorded April 8-May 12 (April 22) in spring, September 4-October 2 (September 21) in autumn, frequently in July-August. Nests sparingly in heron colonies in Cowley County (Johnston, 1960; Zuvanich and McHenry, 1964). *C. a. egretta* (Gmelin) occurs in Kansas.

* **Snowy Egret:** *Leucophoyx thula* (Molina).—Postbreeding summer visitant, local summer resident, around lakes, streams and marshes. Recorded late March to October. Two nests found summer 1952, 6 miles north, 4½ miles west Garden City, Finney County (Tordoff, 1956:312). *L. t. thula* occurs in Kansas.

For reference see Green Heron.

Louisiana Heron: *Hydranassa tricolor* (Müller).—Postbreeding summer visitant. One specimen, McPherson County, September 12, 1948 (Tordoff, 1956:312), sight records elsewhere in east.

* **Black-crowned Night Heron:** *Nycticorax nycticorax* (Linnaeus).—Common transient, local summer resident, along streams, lakes, and marshes. Dates of passage March 25-May 18 (April 25) in spring, September 10-November 11 (September 25) in autumn. Eggs (3.7) laid May 1 to June 10 (May 15). *N. n. hoactli* (Gmelin) occurs in Kansas.

Allen, R. P. and Mangels, F. P. (1940), Studies of the nesting behavior of the black-crowned night heron. Proc. Linnaean Soc. New York, 50-51:1-28.

* **Yellow-crowned Night Heron:** *Nyctanassa violacea* (Linnaeus).—Transient, local summer resident in riparian habitats, chiefly southeast. Arrives April 15-May 18 (April 27) in spring, departs on or before August 20 in autumn. Eggs laid May and June, about 4 in number. *N. v. violacea* occurs in Kansas.

* **Least Bittern:** *Ixobrychus exilis* (Gmelin).—Transient, local summer resident in marshlands. Arrives April 9-May 22 (May 6) in spring, departs by October 24 in autumn. Eggs (4) laid May 21-July 20 (June 5). *I. e. exilis* occurs in Kansas.

Weller, M. W. (1961), Breeding biology of the least bittern. Wilson Bull., 73:11-35.

* **American Bittern:** *Botaurus lentiginosus* (Rackett).—Transient, local summer resident in marshes and heavy grassland. Arrives April 4-May 9 (May 1) in spring, departs October 6-December 12 (October 16) in autumn. Eggs (4) laid May (and June?), Anderson and Finney counties.

Mousley, H. (1939), Home life of the American bittern. Wilson Bull., 51:83-85.

Wood Ibis: *Mycteria americana* Linnaeus.—Vagrant. One specimen (KU 9489): Goodland, Sherman County, October 4, 1913.

* **White-faced Ibis:** *Plegadis chihi* (Vieillot).—Transient, local summer resident, around marshes. Recorded April 17-October 6. Bred in Barton County at least in 1951 and 1962 (Nossaman, 1952:7; M. Schwilling, ms.). Eggs (3.9) laid June and July.

Roseate Spoonbill: *Ajaia ajaja* (Linnaeus).—Vagrant. One specimen: Butler County, March 20, 1899 (Tordoff, 1956:313).

American Flamingo: *Phoenicopterus ruber* Linnaeus.—Vagrant. One specimen (in headquarters, Kansas Forestry, Fish and Game Commission, Pratt): Stafford County, autumn, 1928.

[**Trumpeter Swan:** *Olor buccinator* (Richardson).—No longer occurs in Kansas, but early records from the Great Plains indicate it probably did.]

Whistling Swan: *Olor columbianus* (Ord).—Rare transient and winter visitant around lakes and marshes. Formerly common, when many specimens taken, November 1-April 6.

Stewart, R. E., and Manning, J. H. (1958), Distribution and ecology of whistling swans in the Chesapeake Bay region. Auk, 75:203-212.

* **Canada Goose:** *Branta canadensis* (Linnaeus).—Common transient, local winter resident, around marshes and grassland. Arrives September 18-October 18 (October 11) in autumn, departs April 16-May 13 (April 29) in spring; a few stay through summer. Formerly nested along Missouri River. *B. c. moffitti* Aldrich, *B. c. leucopareia* (Brandt), *B. c. minima* Ridgway, and *B. c. hutchinsi* (Richardson) occur in Kansas.

Kossack, C. W. (1950), Breeding habits of Canada geese under refuge conditions. Amer. Midl. Nat., 43:627-649.

Brant: *Branta bernicla* (Linnaeus).—Vagrant. One specimen (KU 7490): Leavenworth County, November 15, 1879; recent sight records in east. *B. b. hrota* (Müller) occurs in Kansas.

White-fronted Goose: *Anser albifrons* (Scopoli).—Common transient, mainly central and west, around wetlands and prairies. Arrives September 24-October 12 (October 4), departs April 8-June 12 (April 17); scarce midwinter. *A. a. frontalis* Baird occurs in Kansas.

Snow Goose: *Chen caerulescens* (Linnaeus).—Common transient, around wetlands and prairies. Arrives October 2-21 (October 11), departs April 29-May 11 (May 3); scarce midwinter. *C. c. caerulescens* occurs throughout Kansas.

Soper, D. J. (1942), Life history of the blue goose. Proc. Boston Soc. Nat. Hist., 42:121-225.

[**Ross Goose:** *Chen rossi* (Cassin).—Sight record Wyandotte County State Lake, November 22, 1951.]

Fulvous Tree Duck: *Dendrocygna bicolor* (Vieillot).—Vagrant; three individuals killed 1929 or 1930, Cheyenne Bottoms, Barton County; specimens not saved (Tordoff, 1956:314).

* **Mallard:** *Anas platyrhynchos* Linnaeus.—Common transient and winter resident, local summer resident, in wetlands. Abundant October to April. Eggs (12) laid April 1-June 10 (May 5). *A. p. platyrhynchos* occurs in Kansas.

Johnsgard, P. A. (1960), A quantitative study of the sexual behavior of mallards and black ducks. Wilson Bull., 72:133-155.

Black Duck: *Anas rubripes* Brewster.—Rare to uncommon transient and winter resident central and east. Recorded September 29-May 8.

Johnsgard, P. A. (1961), Evolutionary relationships among the North American mallards. Auk, 78:3-43.

* **Mottled Duck:** *Anas fulvigula* Ridgway.—Irregular summer resident and vagrant. Nine eggs laid late June, Cheyenne Bottoms, Barton County, 1963 (Marvin Schwilling, ms.). *A. f. maculosa* Sennett occurs in Kansas.

* **Gadwall:** *Anas strepera* Linnaeus.—Common transient, uncommon winter resident, irregular or local summer resident (Cheyenne Bottoms, Barton County, 1963, 1964, Marvin Schwilling, ms.).

Gates, J. M. (1962), Breeding biology of the gadwall in northern Utah. Wilson Bull., 74:43-67.

* **Pintail:** *Anas acuta* Linnaeus.—Common transient, uncommon winter resident, local summer resident, around marshes and lakes. Most abundant September to May but scarce midwinter. Eggs (10) laid April 21-June 10 (May 5).

Munro, J. A. (1944), Studies of waterfowl in British Columbia. Pintail. Canadian Jour. Res., 22:60-86.

Green-winged Teal: *Anas carolinensis* Gmelin.—Common transient, rare winter resident, around marshes and ponds. Arrives August 30-October 1 (September 24), departs May 10-June 11 (May 25).

* **Blue-winged Teal:** *Anas discors* Linnaeus.—Common transient, local summer resident, around marshes and ponds. Arrives March 9-April 5 (March 23), departs October 7-November 26 (October 20). Eggs (8-12) laid May 1-June 20 (May 15). *A. d. discors* Linnaeus occurs in Kansas.

Bennett, L. J. (1938), The blue-winged teal. Collegiate Press, Ames, Iowa. 144 pp.

Cinnamon Teal: *Anas cyanoptera* Vieillot.—Uncommon to rare transient, probable local summer resident, more numerous in west, around marshes and ponds. Noted chiefly in spring, March 12-June 6 (April 18). *A. c. septentrionalium* Snyder and Lumsden occurs in Kansas.

* **Shoveler:** *Anas clypeata* Linnaeus.—Common transient, local summer resident, rare winter resident, around marshes and ponds. Spring arrival February 14-March 26 (March 9), autumnal depar-

ture October 15-November 17 (November 7). Two nesting records, from Barton and Finney counties (Tordoff, 1956:315).

Girard, G. L. (1939), Notes on the life history of the shoveler. Trans. Fourth N. Amer. Wildl. Conf., 364-371.

[**European Widgeon:** *Mareca penelope* (Linnaeus).—Probably transient, rare but regular; several sight records central and east. No specimen from state.]

* **American Widgeon:** *Mareca americana* (Gmelin).—Common transient, rare summer and winter resident, around marshes and lakes. Autumnal arrival October 1-27 (October 22), spring departure May 1-June 10 (May 21). Nested 1963 at Cheyenne Bottoms, Barton County (Marvin Schwilling, ms.), last half of June, see Zuvanich and McHenry (1964:175).

* **Wood Duck:** *Aix sponsa* (Linnaeus).—Rare transient in west, uncommon transient, local summer resident, in east, around wooded ponds and streams. Recorded from March 5 to December 8, most numerous in October. Eggs (10-23) laid March 21-May 10 (mid-April).

Stewart, P. A. (1958), Local movements of wood ducks (*Aix sponsa*). Auk, 75:157-168.

* **Redhead:** *Aythya americana* (Eyton).—Uncommon transient and winter resident, local summer resident, around marshes, lakes, and rivers. Autumnal arrival October 6-November 22 (October 27), spring departure north April 21-May 25 (May 2). Nesting records from Cheyenne Bottoms, Barton County (M. Schwilling), eggs (8.8) laid mid-May to mid-June, 1962, 1963.

Weller, M. W. (1957), Growth, weights and plumages of the redhead, *Aythya americana*. Wilson Bull., 69:5-38.

Ring-necked Duck: *Aythya collaris* (Donovan).—Uncommon but regular transient, rare winter resident, around marshes, lakes, and rivers. Present chiefly February 11-May 10, October 23-November 14.

Mendall, H. L. (1958), The ring-necked duck in the northeast. Univ. Maine Studies, Ser. 2, 73:1-320.

* **Canvasback:** *Aythya valisineria* (Wilson).—Uncommon but regular transient, rare winter resident, local summer resident, around marshes, lakes, and rivers. Autumnal arrival October 6-November 22 (October 23), spring departure April 4-May 10 (April 19). Nested Cheyenne Bottoms, Barton County, 14 eggs, June 20, 1962 (M. Schwilling, ms.).

Hochbaum, H. A. (1944), The canvasback on a prairie marsh. Amer. Wildl. Inst., Washington, D. C., 201 pp.

Greater Scaup: *Aythya marila* (Linnaeus).—Uncommon, usually overlooked, transient, chiefly east, on lakes and rivers. Autumnal arrival October 29-December 7 (November 17), spring arrival March 3-April 12 (April 1), departure April 21-May 15 (April 30). One known specimen (KU 38822): 8½ miles north Clay Center, Clay County, April 8, 1961 (Anderson, 1961). *A. m. nearctica* Stejneger occurs in Kansas.

Lesser Scaup: *Aythya affinis* (Eyton).—Common transient, rare winter resident, around lakes and rivers. Autumnal arrival September 4-October 29 (October 18), spring departure May 7-June 19 (May 27). Sight records through summer but no nesting record.

Common Goldeneye: *Bucephala clangula* (Linnaeus).—Uncommon transient, winter resident, around lakes and rivers. Recorded November 8-May 8. *B. c. americana* (Bonaparte) occurs in Kansas.

Bufflehead: *Bucephala albeola* (Linnaeus).—Uncommon transient, rare winter resident, around lakes and rivers. Recorded September 19-November 27, March 4-April 30.

Oldsquaw: *Clangula hyemalis* (Linnaeus). — Rare transient, winter visitant, around lakes and rivers. Nine specimens, six extant, many sight records. Recorded November to April.

Common Eider: *Somateria mollissima* (Linnaeus).—Vagrant. One specimen (KU 3620): Kansas River near Lecompton, Douglas County, November 3, 1891. S. *m. v-nigra* Bonaparte occurs in Kansas.

McKinney, F. C. (1961), An analysis of the displays of the . . . eider. . . . Behaviour, Suppl. VIII:124 pp.

King Eider: *Somateria spectabilis* (Linnaeus).—Vagrant. One specimen (KU 27487): Kansas River 1 mile east Lawrence, Douglas County, November 27, 1947.

White-winged Scoter: *Melanitta deglandi* (Bonaparte).—Rare transient northeast, around lakes and rivers. Nine specimens, Douglas and Leavenworth counties, all November dates. *M. d. deglandi* occurs in Kansas.

Surf Scoter: *Melanitta perspicillata* (Linnaeus).—Rare transient east around lakes and rivers. Seven specimens Douglas County, one Sedgwick County, all October and November.

Common Scoter: *Oidemia nigra* (Linnaeus).—Vagrant. L. B.

Carson identified an adult male killed at Horton Lake, Brown County in early 1930s (Tordoff, 1956:317). *O. n. americana* Swainson occurs in Kansas.

* **Ruddy Duck:** *Oxyura jamaicensis* (Gmelin).—Common transient, rare winter resident, local summer resident, around marshes and lakes. Seen most frequently March, April, May, October, November. Nesting records for Barton, Stafford, and Grant counties. *O. j. rubida* (Wilson) occurs in Kansas.

Low, J. B. (1941), Nesting of the ruddy duck in Iowa. Auk, 58:506-517.

Hooded Merganser: *Lophodytes cucullatus* (Linnaeus).—Uncommon transient, winter resident, around lakes and streams. Recorded chiefly October 29-May 1, but seen through summer; two specimens (KU 6327, 8728) taken mid-June, Douglas County.

Johnsgard, P. A. (1961), The sexual behavior and systematic position of the hooded merganser. Wilson Bull., 73:227-236.

Common Merganser: *Mergus merganser* Linnaeus.—Common transient, winter resident, around lakes and streams. Autumnal arrival October 21-November 18 (November 11), spring departure April 20-May 9 (April 30); most numerous February, March. *M. m. americanus* Cassin occurs in Kansas.

Roberts, A. A., and Huntington, E. H. (1959), Food habits of the merganser in New Mexico. New Mexico Dept. Game and Fish Bull., 9:1-36.

Red-breasted Merganser: *Mergus serrator* Linnaeus.—Uncommon transient, around ponds, lakes, and streams. Recorded March 16-June 1, November 2-December 8. *M. s. serrator* occurs in Kansas.

* **Turkey Vulture:** *Cathartes aura* (Linnaeus).—Common transient, regular summer resident, throughout state. Spring arrival March 7-30 (March 15), autumnal departure September 24-October 28 (October 5). Eggs (1.8) laid April 21-June 10 (May 1). *C. a. meridionalis* Swann occurs in Kansas.

Coles, V. (1944), Nesting of the turkey vulture in Ohio caves. Auk, 61:219-228.

* **Black Vulture:** *Coragyps atratus* (Meyer).—Former, perhaps current, summer resident southeast; nested Labette County (Goss, 1891:245). Specimen purported (Goss, *loc. cit.*) taken at Ellis, Ellis County, March 27, 1885, now lost.

* **Swallow-tailed Kite:** *Elanoides forficatus* (Linnaeus).—Former summer resident in east, seemingly vagrant at present; last specimen taken Hamilton, Greenwood County, May 17, 1914. Eggs (2) laid in May. *E. f. forficatus* occurs in Kansas.

* **Mississippi Kite:** *Ictinia misisippiensis* (Wilson).—Common resident in south, west to Morton County, north to Barton County, formerly northeast, in riparian woodland. Recorded May 16-September 25. Eggs (2) laid April 20-June 10 (May 5).

Fitch, H. S. (1963), Observations on the Mississippi kite in southwestern Kansas. Univ. Kansas Publ., Mus. Nat. Hist., 12:503-519.

Goshawk: *Accipiter gentilis* (Linnaeus).—Rare, irregular winter visitant, chiefly east. Recorded October 27-February 24. *A. g. atricapillus* (Wilson) occurs in Kansas.

Schnell, J. H. (1958), Nesting behavior and food habits of goshawks in the Sierra Nevada of California. Condor, 60:377-403.

* **Sharp-shinned Hawk:** *Accipiter striatus* Vieillot.—Transient and winter resident at low density in woodlands, rare summer resident northeast. Most evident September and January through May. Eggs (4) laid in April. *A. s. velox* (Wilson) occurs in Kansas.

* **Cooper Hawk:** *Accipiter cooperii* (Bonaparte).—Uncommon resident in eastern third in woodland. Numbers augmented by transients in winter. Eggs (4) laid March 21-May 30 (April 25).

* **Red-tailed Hawk:** *Buteo jamaicensis* (Gmelin).—Resident, transient, and winter resident, common in east, uncommon to rare in far west. Eggs (2.6) laid February 21-April 10 (March 5). *B. j. borealis* (Gmelin) breeds in eastern Kansas, *B. j. calurus* Cassin probably in west; *B. j. kriderii* Hoopes and *B. j. harlani* (Audubon) transients and winter residents.

Fitch, H. S., Swenson, S., and Tillotson, D. F. (1946), Behavior and food habits of the red-tailed hawk. Condor, 48:205-237.

* **Red-shouldered Hawk:** *Buteo lineatus* (Gmelin).—Uncommon summer resident and transient, rare winter resident, chiefly east, around riparian habitats. Spring arrival February 10-March 14 (February 26), departs south October-December. Known to nest in Leavenworth, Woodson, and Linn counties, and probably nests in Doniphan County. *B. l. lineatus* occurs in Kansas.

Stewart, R. E. (1949), Ecology of a nesting red-shouldered hawk population. Wilson Bull., 61:26-35.

* **Broad-winged Hawk:** *Buteo platypterus* (Vieillot).—Uncommon transient and summer resident in east, around riparian habitats. Spring arrival April 4-April 21 (April 12), autumnal departure September 1-October 20. Eggs (3) laid April 21-May 30.

Burns, F. L. (1901), A monograph of the broad-winged hawk (*Buteo platypterus*). Wilson Bull., 23:143-320.

* **Swainson Hawk:** *Buteo swainsoni* Bonaparte.—Common transient and summer resident around grasslands, most numerous in

west. Spring arrival March 10-April 28 (April 12), autumnal departure October 5-November 2 (October 12); sight records in midwinter. Eggs (2.4) laid April 11-June 10 (April 25).

Rough-legged Hawk: *Buteo lagopus* (Pontoppidan).—Common winter resident, chiefly west, in grassland. Recorded September 21-April 8, most individuals December to March. *B. l. s johannis* (Gmelin) occurs in Kansas.

Barth, E. K. (1952), Breeding biology of the rough-legged buzzard and variations in the populations in 1938-1952. Papers on Game Research, 8:127-138.

* **Ferruginous Hawk:** *Buteo regalis* (Gray).—Transient and winter resident, common in west; rare summer resident in west. Eggs (3) laid March 11-April 30.

* **Harris Hawk:** *Parabuteo unicinctus* (Temminck).—Rare winter visitant, local, perhaps aberrant, summer resident, chiefly in south. Two specimens, both taken December, 1918, Sedgwick and Douglas counties; nested Lyon County, March-May, 1963 (Parmelee, 1964). *P. u. harrisi* (Audubon) occurs in Kansas.

* **Golden Eagle:** *Aquila chrysaetos* (Linnaeus).—Winter visitant, common in west. Recorded October 28-June 19. Purported nesting prior to 1891, southeastern Comanche County, described by Goss (1891:273). *A. c. canadensis* (Linnaeus) occurs in Kansas.

Carnie, S. K. (1954), Food habits of nesting golden eagles in the coast ranges of California. Condor, 56:3-12.

Bald Eagle: *Haliaeetus leucocephalus* (Linnaeus).—Transient and local winter resident, chiefly central, around large lakes and marshlands. Occurs October 17-May 4. *H. l. alascanus* Townsend occurs in Kansas.

Herrick, F. H. (1934), The American eagle. New York.

* **Marsh Hawk:** *Circus cyaneus* (Linnaeus).—Common transient and winter resident, uncommon resident, around marshes and open fields. Eggs (5.2) laid April 11-May 20 (May 5). *C. c. hudsonius* (Linnaeus) occurs in Kansas.

Hecht, W. R. (1951), Nesting of the marsh hawk at Delta, Manitoba. Wilson Bull., 63:167-176.

Osprey: *Pandion haliaetus* (Linnaeus).—Uncommon, irregular, transient, temporary local resident, around large lakes, marshes, and rivers. Occurs most frequently April, May, September, and October, but may be seen any time. *P. h. carolinensis* (Gmelin) occurs in Kansas.

Abbott, C. G. (1911), The home-life of the osprey. London.

Gyrfalcon: *Falco rusticolus* Linnaeus.—Vagrant. One specimen (KU 34262): Ashland, Clark County, December 1, 1880. *F. r. obsoletus* Gmelin occurs in Kansas.

Cade, T. J. (1960), Ecology of the peregrine and gyrfalcon populations in Alaska. Univ. California Publ. Zool., 63:151-290.

Prairie Falcon: *Falco mexicanus* Schlegel.—Local summer visitant west, transient and winter resident, uncommon west, rare east, associated with grassland. Present northeast sporadically September through May.

* **Peregrine Falcon:** *Falco peregrinus* Tunstall.—Uncommon transient and winter resident, typically around marshes, lakes, and rivers. Formerly nested, most notably at Neosho Falls, Woodson County (Goss, 1891:283); there eggs laid February-March, numbering 3-4 per clutch. *F. p. anatum* Bonaparte occurs in Kansas.

Beebe, F. L. (1960), The marine peregrines of the Pacific coast. Condor, 62:145-189.

Pigeon Hawk: *Falco columbarius* Linnaeus.—Uncommon transient, rare winter resident, in open woodland. Most conspicuous late August-September, late winter-early spring. *F. c. columbarius* occurs in east, *F. c. richardsonii* Ridgway in west; *F. c. bendirei* Swann is vagrant.

Lawrence, L. de K. (1949), Notes on nesting pigeon hawks at Pimisi Bay, Ontario. Wilson Bull., 61:15-25.

* **Sparrow Hawk:** *Falco sparverius* Linnaeus.—Common resident and transient, near open woodland. Eggs (4) laid March 21-May 20, peak around April 10. *F. s. sparverius* occurs in Kansas.

Roest, A. I. (1957), Notes on the American sparrow hawk. Auk, 74:1-19.

Ruffed Grouse: *Bonasa umbellus* (Linnaeus).—Formerly resident in east, now extirpated. One specimen (KU 31944): southeastern Kansas, between 1885 and 1910. *B. u. umbellus* occurred in Kansas.

Bump, G., Darrow, R. W., Edminster, F. C., and Crissey, W. F. (1947), The ruffed grouse. . . . New York State Conserv. Dept., xxxvi + 915 pp.

* **Greater Prairie Chicken:** *Tympanuchus cupido* (Linnaeus).—Local but common resident, chiefly eastern third; scattered flocks northwest, around bluestem prairie grassland. Eggs (12) laid May 1-June 10 (May 5). *T. c. pinnatus* (Brewster) occurs in Kansas.

Baker, M. F. (1953), Prairie chickens of Kansas. Univ. Kansas Publ., Mus. Nat. Hist., Misc. Publ. 5:1-86.

* **Lesser Prairie Chicken:** *Tympanuchus pallidicinctus* (Ridgway).—Local resident southwest, no farther north and east than

Pawnee County, in sandy grassland. Natural history thought to be like that of preceding species.

Jones, R. E. (1964), The specific distinctness of the greater and lesser prairie chickens. Auk, 81:65-73.

Sharp-tailed Grouse: *Pediocectes phasianellus* (Linnaeus).—Formerly resident in much of west, now probably extirpated. *P. p. jamesi* Lincoln occurred in Kansas.

Marshall, W. H., and Jensen, M. S. (1937), Winter and spring studies of the sharp-tailed grouse in Utah. Jour. Wildl. Man., 1:87-99.

* **Bobwhite:** *Colinus virginianus* (Linnaeus).—Common resident, in open country with scattered brush, broken woodland, and woodland edge. Eggs (12.7) laid May 1-September 20 (May 25). *C. v. virginianus* occurs in northeastern Kansas, *C. v. taylori* Lincoln in remainder.

Stoddard, H. L. (1931), The bob-white quail. . . . Scribners, New York.

* **Scaled Quail:** *Callipepla squamata* (Vigors).—Common local resident about sandy grassland, west of Clark County and south of Arkansas River. Eggs (10-12) laid about May. *C. s. pallida* Brewster occurs in Kansas.

* **Ring-necked Pheasant:** *Phasianus colchicus* Linnaeus.—Common resident in west, local in east, about agricultural disclimaxes. Introduced repeatedly by man; present stock of mixed ancestry.

Delacour, J. (1951), The pheasants of the world. London.

* **Turkey:** *Meleagris gallopavo* Linnaeus.—Former common resident in east, along floodplain woodland. Once extirpated, but since 1958 re-establishing breeding populations along Arkansas River, Cowley County, Medicine Lodge River, Barber County, elsewhere in south and east, from birds native, and introduced, to Oklahoma. *M. g. silvestris* Vieillot occurred originally in Kansas; present birds probably also referable to that stock.

Dalke, P. D., Leopold, A. S., and Spencer, D. L. (1946), The ecology and management of the wild turkey in Missouri. Missouri State Conserv. Comm., Tech. Bull., 1:1-86.

Whooping Crane: *Grus americana* (Linnaeus).—Rare but regular transient; line of passage most frequently in east-central part of state, but seen elsewhere. Recorded chiefly March, April, October.

Allen, R. P. (1952), The whooping crane. Nat. Aud. Soc. Res. Rept. No. 3.

Sandhill Crane: *Grus canadensis* (Linnaeus).—Transient, common in west, rare in east, about open fields and marshes. Recorded

September 29-October 31, March 13-April 19. *G. c. canadensis* and *G. c. tabida* (Peters) occur in Kansas.

Walkinshaw, L. H. (1942), The sandhill cranes. Bull. Cranbrook Inst. Sci., 29:x + 202 pp.

* **King Rail:** *Rallus elegans* Audubon.—Transient, local summer resident, rare winter resident, in marshland. Spring arrival April 7-28 (April 18), autumnal departure unknown (September?-December?). Eggs (9) laid May 1-July 31. *R. e. elegans* occurs in Kansas.

Meanley, B., and Meanley, A. C. (1958), Growth and development of the king rail. Auk, 75:381-386.

* **Virginia Rail:** *Rallus limicola* Vieillot.—Common transient, local summer resident, around marshes; probably overwinters in south. Spring arrival April 19-May 18, autumnal departure September 1-October 30. Eggs (6-12) laid May and June. *R. l. limicola* occurs in Kansas.

Pospichal, L. B., and Marshall, W. H. (1954), A field study of sora rail and Virginia rail in central Minnesota. The Flicker, 26:2-32.

* **Sora:** *Porzana carolina* (Linnaeus).—Common transient, local summer resident, around marshes; probably overwinters in south. Spring arrival April 11-May 9 (May 1), autumnal departure September 30-November 9 (October 18). Eggs (10) probably laid May-August.

Walkinshaw, L. H. (1940), Summer life of the sora rail. Auk, 57:153-168.

Yellow Rail: *Coturnicops noveboracensis* (Gmelin).—Uncommon or rare transient in east, around marshes. Recorded April and October. *C. n. noveboracensis* occurs in Kansas.

* **Black Rail:** *Laterallus jamaicensis* (Gmelin).—Local summer resident in marshes. Recorded March 18-September 26. Eggs (8) laid in June. *L. j. jamaicensis* occurs in Kansas.

Purple Gallinule: *Porphyrula martinica* (Linnaeus).—Rare summer visitant in east, around marshes. Five specimens, April and June, from Douglas, Riley, and Sedgwick counties.

* **Common Gallinule:** *Gallinula chloropus* (Linnaeus).—Local summer resident, around marshes. Present April through September. Eggs (10) laid May-June (Douglas, Coffey, Barton counties). *G. c. cachinnans* Bangs occurs in Kansas.

Howard, H. E. (1940), A waterhen's worlds. Cambridge Univ. Press, London.

* **American Coot:** *Fulica americana* Gmelin.—Common transient, local summer resident, irregular winter resident, around marshes

and ponds. Eggs (7.7) laid May 11-June 30 (May 25). *F. a. americana* occurs in Kansas.

Gullion, G. W. (1952), The displays and calls of the American coot. Wilson Bull., 64:83-97.

Semipalmated Plover: *Charadrius semipalmatus* Bonaparte.—Common, low-density, transient, on open ground near ponds or marshes. Spring arrival March 14-April 26, departure May 7-June 8; autumnal arrival July 19-August 20, departure September 14-October 1. *C. s. semipalmatus* occurs in Kansas.

Piping Plover: *Charadrius melodus* (Ord).—Rare transient, on saline flats and open ground around marshes and ponds. Recorded mid-March-late-May, August 8-October 1 (August 31). *C. m. circumcinctus* (Ridgway) occurs in Kansas.

Wilcox, L. (1959), A twenty year banding study of the piping plover. Auk, 76:129-152.

* **Snowy Plover:** *Charadrius alexandrinus* Linnaeus.—Common, low-density summer resident on saline flats, central and southwestern sector, marginal transient, vagrant, elsewhere. Eggs (3) laid May 25-June 20 (June 10). *C. a. tenuirostris* (Lawrence) occurs in Kansas.

* **Killdeer:** *Charadrius vociferus* Linnaeus.—Common transient and summer resident, uncommon winter resident south, on meadowland and pond margins. Present in north early February-early December. Eggs (4) laid March 21-June 30 (May 20). *C. v. vociferus* occurs in Kansas.

Davis, E. (1943), A study of wild and hand reared killdeers. Wilson Bull., 55:223-234.

* **Mountain Plover:** *Eupoda montana* (Townsend).—Local summer resident in west, in short-grass pasture. Known to have bred in Decatur and Greeley counties, where eggs laid late in May (Wolfe, 1961; Johnston, 1960), and probably breeds in Hamilton County (Rising and Kilgore, 1964).

American Golden Plover: *Pluvialis dominica* (Müller).—Regular, low-density transient east and central, near meadows and marshes. Recorded March 29-June 9, September 6-October 30 (October 5). *P. d. dominica* occurs in Kansas.

Black-bellied Plover: *Squatarola squatarola* (Linnaeus).—Irregularly common transient, around meadows and marshes. Recorded April 30-June 5 (May 21), August 9-November 22 (October 12).

Ruddy Turnstone: *Arenaria interpres* (Linnaeus).—Low density transient, on sandy and pebbly lake and river edges. Four specimens, many sight records, Barton County east, in May, August, September, October. *A. i. morinella* (Linnaeus) occurs in Kansas.

* **American Woodcock:** *Philohela minor* (Gmelin).—Uncommon transient overall, rare summer resident east, around wet woodland. Recorded March 17-December 5. Nested near Neosho Falls, Woodson County, small young May 25, 1874 (Goss, 1891:159), probably also northeastern Douglas County, 1958 (Fitch, 1958:194).

Pettingill, O. S., Jr. (1936), The American woodcock, *Philohela minor* (Gmelin). Mem. Boston Soc. Nat. Hist., 9:169-391.

Common Snipe: *Capella gallinago* (Linnaeus).—Common transient, uncommon winter resident, around wet meadows and marshland. Recorded mainly March 16-May 28 (May 3), August 20-December 5 (September 22). *C. g. delicata* (Ord) occurs in Kansas.

* **Long-billed Curlew:** *Numenius americanus* Bechstein.—Low-density transient overall, uncommon summer resident in west in open country; frequently near marshes in passage. Recorded east March 30-May 18, September. Eggs laid early May-June, known only from Morton and Stanton counties (Johnston, 1960). *N. a. americanus* occurs in Kansas.

Whimbrel: *Numenius phaeopus* (Linnaeus).—Rare transient; one specimen, May 22, 1963, Cheyenne Bottoms, Barton County (Parmelee, 1964); sight records elsewhere.

Eskimo Curlew: *Numenius borealis* (Forster).—Formerly common transient, chiefly east; five specimens, 1871-1891, Russell, Ellis, Lyon, Woodson and Douglas counties, March-June.

* **Upland Plover:** *Bartramia longicauda* (Bechstein).—Common transient, locally common summer resident, in grasslands; most abundant in Flint Hills. Arrives April 2-May 5 (April 19), departs September 3-October 6 (September 13). Eggs (4) laid April 21-June 10 (May 5).

Buss, I. O., and Hawkins, A. S. (1939), The upland plover at Faville Grove, Wisconsin. Wilson Bull., 51:202-220.

* **Spotted Sandpiper:** *Actitis macularia* (Linnaeus).—Common transient and summer resident, at pond, river and stream edges. Arrives March 29-April 30 (April 24), departs September 2-October

10 (September 18). Eggs (4) laid in May; records for northeast only.

Nelson, T. (1930), Growth rate of the spotted sandpiper chick with notes on nesting habits. Bird-Banding, 1:1-13.

Solitary Sandpiper: *Tringa solitaria* Wilson.—Common transient, usually near water. Vernal passage March 28-May 24 (May 5), autumnal passage July 9-October 5 (August 15), occasional in June. *T. s. solitaria* occurs in east, *T. s. cinnamomea* (Brewster) in west.

Willet: *Catoptrophorus semipalmatus* (Gmelin).—Uncommon to common transient, in and around meadows and wetlands. Spring arrival March 28-April 27 (April 21), departure May 9-June 9 (May 20); southward movement begins July 9-August 20 (July 22), completed September 5-October 12 (September 14). *C. s. inornatus* (Brewster) occurs in Kansas.

Greater Yellowlegs: *Totanus melanoleucus* (Gmelin).—Common transient, on and near wetlands. Northward spring movement begins March 14-April 12 (March 26); last dates seen in autumn run from October 7-November 22 (October 15).

Lesser Yellowlegs: *Totanus flavipes* (Gmelin).—Common transient, on and near wetlands. Spring arrival March 15-April 18 (April 4), departure in autumn September 24-November 8 (October 11).

Knot: *Calidris canutus* (Linnaeus).—Rare transient, on sandy ground near water. Six specimens (see McHenry, 1964), from Greenwood, Woodson, and Barton counties, in August, September and "spring". *C. c. rufa* (Wilson) occurs in Kansas.

Pectoral Sandpiper: *Erolia melanotos* (Vieillot).—Common transient near wetlands. Spring arrival March 14-31 (March 25), a few present in summer, departure southward September 16-October 28 (September 19).

Pitelka, F. A. (1959), Numbers, feeding schedule, and territoriality in pectoral sandpipers of northern Alaska. Condor, 61:233-264.

White-rumped Sandpiper: *Erolia fuscicollis* (Vieillot).—Common transient near wetlands. Spring arrival March 28-May 1 (April 26), a few present in summer, autumnal departure September 2-25 (September 17).

Baird Sandpiper: *Erolia bairdii* (Coues).—Common transient near wetlands. Spring arrival March 21-April 20 (April 8), a few present in summer, autumnal departure September 13-October 17 (October 1).

Least Sandpiper: *Erolia minutilla* (Vieillot).—Common transient around wetlands. Spring arrival March 28-May 9 (May 1), some present in summer, autumnal departure September 22-October 29 (October 17).

Dunlin: *Erolia alpina* (Linnaeus).—Uncommon transient east and central, around wetlands. Spring arrival April 15-May 26, autumnal movements not well documented (seen only in August).

Short-billed Dowitcher: *Limnodromus griseus* (Gmelin).—Uncommon or rare transient around wetlands; status not studied. Specimens (from Douglas, Russell, and Sumner counties) taken only in spring, but sight records for autumn are available. *L. g. hendersoni* Rowan occurs in Kansas.

Pitelka, F. A. (1950), Geographic variation and the species problem in the shore-bird genus *Limnodromus*. Univ. California Publ. Zool., 50:1-108.

Long-billed Dowitcher: *Limnodromus scolopaceus* (Say).—Common transient around wetlands. Spring arrival March 10-April 21 (April 16), some present in summer, autumnal departure from October 1-November 2 (October 17).

Stilt Sandpiper: *Micropalama himantopus* (Bonaparte).—Common, low-density transient, around wetlands. Spring arrival April 21-May 15 (May 7), some present in summer, autumnal departure from September 14-October 14 (September 28).

Semipalmated Sandpiper: *Ereunetes pusillus* (Linnaeus).—Common transient on wetlands. Springs arrival March 14-April 22 (April 19), some present in summer, autumnal departure September 5-October 21 (September 28).

Western Sandpiper: *Ereunetes mauri* Cabanis.—Common transient in west, uncommon in east, around wetlands. Present from April 14 to October 28, but scarce in June, July.

Buff-breasted Sandpiper: *Tryngites subruficollis* (Vieillot).—Uncommon transient, notably in alfalfa fields. Present July 29-September 26; one record for April (Douglas County).

Oring, L. W. (1964), Displays of the buff-breasted sandpiper at Norman, Oklahoma. Auk, 81:83-86.

Marbled Godwit: *Limosa fedoa* (Linnaeus).—Uncommon transient, near wetlands. Spring passage from April 16 to June 5 (May 1); one record late summer (August 20).

Hudsonian Godwit: *Limosa haemastica* (Linnaeus).—Regular, low-density transient, most numerous east and central, around wet-

lands. Arrives April 1-23 (April 19), departs May 7-27 (May 16); recorded twice (August 2, October 2) in autumn.

Sanderling: *Crocethia alba* (Pallas).—Low-density transient, near sandy wetlands. Recorded March 14-October 8, but scarce June-August.

* **American Avocet:** *Recurvirostra americana* Gmelin.—Regular transient, local summer resident, chiefly central and west, near wetlands. Arrives April 2-29 (April 22), departs October 6-November 21 (October 28). Eggs (4) laid May 11-June 20 (June 5).

Black-necked Stilt: *Himantopus mexicanus* (Müller).—Rare transient, around wetlands. Records April-July, from Stafford, Seward, Finney, Kearney, Crawford, Sedgwick, and Cloud counties.

Red Phalarope: *Phalaropus fulicarius* (Linnaeus).—Vagrant, on or near open, shallow water. Three specimens: Lakeview, Douglas County, November 5, 1905; Ottawa, Franklin County, October 25, 1926; Cheyenne Bottoms, Barton County, October 8, 1959 (Parmelee, 1963).

* **Wilson Phalarope:** *Steganopus tricolor* Vieillot.—Common transient, local summer resident, near marshes and ponds. Arrives April 2-29 (April 24), leaves September 5-October 14 (September 30). Eggs (4) laid May 21-June 20 (June 5).

Northern Phalarope: *Lobipes lobatus* (Linnaeus).—Rare transient, near water. Recorded May 8-28, August 30-October 18; five specimens from state: Wallace, Hamilton, Barton, and Douglas counties.

Tinbergen, N. (1935), . . . The behaviour of the red-necked phalarope (*Phalaropus lobatus* L.) in spring. Ardea, 24:1-42.

Pomarine Jaeger: *Stercorarius pomarinus* (Temminck).—Vagrant. One specimen (KU 6967): Kansas River near Lawrence, Douglas County, October 10, 1898.

Pitelka, F. A., Tomich, P. Q., and Treichel, G. W. (1955), Breeding behavior of jaegers and owls near Barrow, Alaska. Condor, 57:3-16.

Long-tailed Jaeger: *Stercorarius longicaudus* Vieillot.—Vagrant. One specimen (KU 32610): Cheyenne Bottoms, Barton County, June 23, 1955.

[**Glaucous Gull:** *Larus hyperboreus* Gunnerus.—Sight records at Lake Shawnee, Shawnee County, January 27, 1951 (Tordoff, 1956: 327), no specimen from Kansas.]

Herring Gull: *Larus argentatus* Pontoppidan. — Regular, low-density transient, frequently near lakes and rivers. Spring arrival February 8-28 (February 17), departure April 11-May 31 (May 3); autumnal arrival September 2-25 (September 20), departure October 8-November 22 (October 26), occasional in winter. *L. a. smithsonianus* (Coues) occurs in Kansas.

Tinbergen, N. (1953), The herring gull's world. Collins, London.

California Gull: *Larus californicus* Lawrence.—Vagrant. One specimen (present location unknown) taken by Goss (1891:21), Arkansas River, Reno County, October 20, 1880.

Johnston, D. W. (1956), The annual reproductive cycle of the California gull. Condor, 58:134-162, 206-221.

Ring-billed Gull: *Larus delawarensis* Ord. — Locally common transient, near wetlands and recently-plowed fields. Spring arrival February 17-March 16 (March 8), departure May 7-26 (May 16); autumnal arrival August 1-September 13 (September 5), departure October 17-November 18 (November 6), occasional in winter.

Moynihan, M. (1959), A revision of the family Laridae (Aves). Amer. Mus. Nov., 1928:1-42.

Laughing Gull: *Larus atricilla* Linnaeus.—Vagrant. Sight records and one specimen (collection of Richard H. Schmidt) 3 miles east, 2½ miles south Canton, in Marion County, May 15, 1933.

Franklin Gull: *Larus pipixcan* Wagler.—Common transient, near water and recently-plowed fields. Spring arrival April 1-27 (April 13), occasional in summer, autumnal departure October 13-November 17 (October 25).

Moynihan, M. (1955), Some aspects of reproductive behavior in the Black-headed gull (*Larus ridibundus ridibundus* L.) and related species. Behaviour, Suppl. 4:1-201.

Bonaparte Gull: *Larus philadelphia* (Ord).—Rare transient. Occurs March-May, August-November.

[**Black-legged Kittiwake:** *Rissa tridactyla* (Linnaeus).—Many sight records, especially in autumn; no specimen from Kansas.]

Sabine Gull: *Xema sabini* (Sabine). — Rare transient, chiefly around lakes. Subadult birds in September, October, in Allen, Barton, Greenwood, and Shawnee counties. *X. s. sabini* occurs in Kansas.

* **Forster Tern:** *Sterna forsteri* Nuttall.—Locally common transient Barton and Stafford counties eastward, local summer resident

Barton County. Spring arrival April 6-29 (April 22), autumnal departure August 1-November 1 (September 3). Eggs (4) laid late May-mid-June.

Common Tern: *Sterna hirundo* Linnaeus.—Rare transient, near lakes and rivers. Two specimens: Anderson County, May 11, 1878, and Greenwood County, September 2, 1912. Sight records March 21-June 1, September 14-October 8. *S. h. hirundo* occurs in Kansas.

Palmer, R. S. (1941), A behavior study of the common tern (*Sterna hirundo hirundo* L.). Proc. Boston Soc. Nat. Hist., 42:1-119.

* **Least Tern:** *Sterna albifrons* Pallas.—Uncommon transient, local summer resident, on rivers and marshes. Spring arrival May 13-30 (May 28), autumnal departure August 9-September 7 (August 25). Breeding records from Hamilton, Rooks, Meade, Barton, and Stafford counties, where eggs (2, 3, or 4) laid May 21-June 30 (June 5).

Hardy, J. W. (1957), The least tern in the Mississippi valley. Publ. Mus. Michigan St. Univ. Biol. Ser., 1:1-60.

Caspian Tern: *Hydroprogne caspia* (Pallas).—Uncommon transient, near water. Many sight records, two specimens: Douglas County, September 27, 1928 (KU 17147); Barton County, June 2, 1961 (Parmelee, 1961:31).

* **Black Tern:** *Chlidonias niger* (Linnaeus).—Common transient, local summer resident, chiefly central, on wetlands. Spring arrival April 30-May 29 (May 14), depart September 2-30 (September 11). Known to breed in Barton County, where eggs (3) laid June 11-July 20.

* **Rock Dove:** *Columba livia* Gmelin.—Locally common resident, in towns, near farms. Eggs (2) laid chiefly January 11-June 10 (April 5), but a few occur in any month. Feral stocks of mixed genetic heritage, but unquestionably of semi-domesticated ancestry.

Whitman, C. O. (1919), The behavior of pigeons. Carnegie Inst. Washington, Publ. 257.

[**Band-tailed Pigeon:** *Columba fasciata* Say.—Sight record (Hibbard, 1964), Clark County, July 19, 1963.]

* **Mourning Dove:** *Zenaida macroura* (Linnaeus). — Common transient and summer resident, uncommon winter resident, in open and edge habitats. Most abundant March-November. Eggs (2) laid March 21-August 10 (May 15). *Z. m. marginella* (Woodhouse) occurs in Kansas.

Hanson, H. C., and Kossack, C. W. (1963), The mourning dove in Illinois. Illinois Dept. Conserv., Tech. Bull. 2:xvi + 133 pp.

[* **Passenger Pigeon:** *Ectopistes migratorius* (Linnaeus).—Formerly uncommon or irregular transient and summer resident in east, now extinct. Three specimens (State Historical Society Museum of Natural History, Topeka), Neosho Falls, Woodson County, April 14, 1876.]

Schorger, A. W. (1955), The passenger pigeon. . . . Univ. Wisconsin Press, Madison. xiii + 424 pp.

Ground Dove: *Columbina passerina* (Linnaeus).—Irregular post-breeding wanderer. Two specimens: near Garnett, Anderson County (KU 36900), November 28, 1958; Greenwood County, near Toronto (Univ. Michigan Mus. Zool., 159375), November 20, 1963. Sight records Pottawatomie and Lyon counties. *C. p. passerina* occurs in Kansas.

Nicholson, D. J. (1937), Notes on the breeding of the ground dove in Florida. Wilson Bull., 49:101-114.

Inca Dove: *Columbina inca* (Lesson).—Vagrant. One specimen (KU 33241): Meade State Game Farm, Meade County, March 26, 1957 (Hardy, 1958); sight records in Harvey County (November-January) and Shawnee County (June).

Johnston, R. F. (1960), Behavior of the Inca dove. Condor, 62:7-24.

[* **Carolina Parakeet:** *Conuropsis carolinensis* (Linnaeus).—Formerly common resident, chiefly east, now extinct. Goss (1891) reported nesting near Neosho Falls, Woodson County, 1858. One specimen, taken May 4, 1843, Fort Leavenworth, Leavenworth County (in American Museum of Natural History); another seemingly not saved taken near Potter, Atchison County, 1904. The specimen purportedly from Emporia, Lyon County, and listed (Tordoff, 1956; Johnston, 1960) as of Accn. T-391, Emporia State Teachers College collection, is not a Carolina Parakeet (D. F. Parmelee, personal communication). *C. c. ludovicianus* (Gmelin) occurred in Kansas.]

McKinley, D. W. (1964), History of the Carolina parakeet in its southwestern range. Wilson Bull., 76:68-93.

* **Yellow-billed Cuckoo:** *Coccyzus americanus* (Linnaeus).—Common transient and summer resident, in heavy riparian shrubbery and second-growth. Spring arrival April 29-May 22 (May 12), autumnal departure September 13-October 12 (September 23). Eggs (3.1) laid May 11-September 10 (June 5). *C. a. americanus* occurs in Kansas.

* **Black-billed Cuckoo:** *Coccyzus erythropthalmus* (Wilson).—Uncommon transient and summer resident, in heavy riparian shrub-

bery and second-growth. Spring arrival May 7-30 (May 19), autumnal departure September 4-October 7 (September 18). Eggs (2.5) laid May 21-August 10 (June 5).

Spencer, Q. R. (1943), Nesting habits of the black-billed cuckoo. Wilson Bull., 55:11-22.

Roadrunner: *Geococcyx californianus* (Lesson).—Regular, low-density resident in south, most abundant southwest. Nesting records from Cowley and Sumner counties, where eggs (3-6) laid early April-mid-July.

Bryant, H. C. (1916), Habits and food of the roadrunner in California. Univ. California Publ. Zool., 17:21-58.

Groove-billed Ani: *Crotophaga sulcirostris* Swainson.—Vagrant. Three records: Crawford County (KU 31948), Marshall County (KU 31951) Lyon County (Tordoff, 1956:330). The two dated records are for October 28 and November 1. *C. s. sulcirostris* occurs in Kansas.

Davis, D. E. (1942), The phylogeny of social nesting habits in the Crotophaginae. Quart. Rev. Biol., 17:115-134.

* **Barn Owl:** *Tyto alba* (Scopoli).—Uncommon or low-density resident in rural areas. Eggs (2-7) laid April-September. *T. a. pratincola* Bonaparte occurs in Kansas.

Stewart, P. E. (1952), Dispersal, breeding behavior, and longevity of banded barn owls in North America. Auk, 69:227-245.

* **Screech Owl:** *Otus asio* (Linnaeus).—Common but inconspicuous resident, in varieties of woodland. Eggs (4.1) laid March 20-May 10 (April 5). *O. a. maxwelliae* (Ridgway) occurs in Kansas.

Allen, A. A. (1924), A contribution to the life history and economic status of the screech owl (*Otus asio*). Auk, 41:1-16.

* **Great Horned Owl:** *Bubo virginianus* (Gmelin).—Common resident in varieties of woodland. Eggs (2-3) laid January 11-March 20 (February 10), earliest regular schedule of any species in Kansas. *B. v. occidentalis* Stone occurs in western fifth of state, *B. v. virginianus* in remainder.

Orians, G., and Kuhlman, F. (1956), Red-tailed hawk and horned owl populations in Wisconsin. Condor, 58:371-385.

Snowy Owl: *Nyctea scandiaca* (Linnaeus).—Rare winter visitant, in open country. Notable numbers recorded in winters of 1945, 1949, 1954, 1957, 1961, 1963.

Watson, A. (1957), The behavior, breeding, and food-ecology of the snowy owl *Nyctea scandiaca*. Ibis, 99:419-462.

* **Burrowing Owl:** *Speotyto cunicularia* (Molina).—Uncommon summer resident in west, in east uncommon transient, in open

country. Spring arrival March 22-April 17 (April 9), autumnal departure September 8-November 14 (September 26). Eggs (7-8) laid April 11-July 10 (May 15). S. *c. hypugaea* (Bonaparte) occurs in Kansas.

* **Barred Owl:** *Strix varia* Barton. — Local resident in heavy woodland in east; status elsewhere unknown, but probably absent from most of west. Eggs (2) laid at least in March. S. *v. varia* occurs in most of eastern Kansas, S. *v. georgica* Latham in southeast.

* **Long-eared Owl:** *Asio otus* (Linnaeus).—Uncommon summer resident, regular transient and winter resident, in woodland. Most conspicuous February-April. Eggs (5-6) laid March 11-April 10. *A. o. wilsonianus* (Lesson) occurs in Kansas.

For reference see Short-eared Owl.

* **Short-eared Owl:** *Asio flammeus* (Pontoppidan).—Uncommon or low-density resident, numbers augmented in winter, in open country with tall grass, scattered shrubs and thickets. Breeding records from Marshall, Bourbon, Republic, and Woodson counties, where eggs (6) laid at least in April. *A. f. flammeus* occurs in Kansas.

Errington, P. L. (1932), Food habits of southern Wisconsin raptors. I. Owls. Condor, 34:176-186.

* **Saw-whet Owl:** *Aegolius acadicus* (Gmelin).—Rare and irregular resident, in and about woodland. Numbers seemingly larger in winter. One nesting record: adults attending young, Wyandotte County, summer, 1951 (Tordoff, 1956:331). *A. a. acadicus* occurs in Kansas.

Santee, R., and Granfield, W. (1939), Behavior of the saw-whet owl on its nesting grounds. Condor, 41:3-9.

* **Chuck-will's Widow:** *Caprimulgus carolinensis* Gmelin.—Locally common summer resident, west to Geary, Stafford, and Clark counties, in and about woodland. Spring arrival April 20-May 1 (April 28), autumnal departure October-December. Eggs (2) laid April 21-May 31.

* **Whip-poor-will:** *Caprimulgus vociferus* Wilson.—Locally common summer resident, west at least to Riley County, in and about woodland; breeding distribution poorly known. Spring arrival April 6-25 (April 17), autumnal departure September 10-October 11 (September 21). Eggs (2) laid May 21-June 20. *C. v. vociferus* occurs in Kansas.

Raynor, G. S. (1941), The nesting habits of the whip-poor-will. Bird-Banding, 12:98-103.

* **Poor-will:** *Phalaenoptilus nuttallii* (Audubon).—Common summer resident in west, rare and local in east, in xeric, rocky scrubland. Recorded April 12-September 21. Eggs (2) laid May 1-June 20. *P. n. nuttallii* occurs in Kansas.

Marshall, J. T., Jr. (1955), Hibernation in captive goatsuckers. Condor, 57:129-134.

* **Common Nighthawk:** *Chordeiles minor* (Forster).—Common summer resident throughout state. Spring arrival April 29-May 23 (May 15), autumnal departure September 13-October 25 (September 23). Eggs (2) laid May 11-June 30 (June 10). *C. m. minor* occurs in northeastern Kansas, *C. m. chapmani* Coues in southeastern sector, *C. m. howellii* Oberholser in remainder.

Weller, M. W. (1958), Observations on the incubation behavior of a common nighthawk. Auk, 75:48-59.

* **Chimney Swift:** *Chaetura pelagica* (Linnaeus).—Common summer resident in east, transient in west. Spring arrival April 2-30 (April 22), autumnal departure September 18-October 30 (October 4). Eggs (4) laid May 11-June 30 (May 25).

Fischer, R. E. (1958), The breeding biology of the chimney swift, *Chaetura pelagica* (Linnaeus). New York State Mus. Bull., 368:1-141.

* **Ruby-throated Hummingbird:** *Archilochus colubris* (Linnaeus).—Uncommon transient and summer resident in east, rare in west, around flowers. Spring arrival April 2-May 19 (May 6), autumnal departure September 3-October 15 (September 10). Eggs (2) laid May 21-July 10.

Pitelka, F. A. (1942), Territoriality and related problems in North American hummingbirds. Condor, 44:189-204.

Calliope Hummingbird: *Stellula calliope* (Gould).—Rare transient in west. One record: 6 miles east Kansas highway 27, 8 miles south Richfield, Morton County, September 3, 1952 (Graber 1954: 149).

* **Belted Kingfisher:** *Megaceryle alcyon* (Linnaeus).—Common summer resident, uncommon winter resident, near water. Greatest numbers present March-November. Eggs (6) laid April 21-May 20. *M. a. alcyon* occurs in Kansas.

Salyer, J. C. II, and Lagler, K. F. (1949), The eastern belted kingfisher in relation to fish management. Trans. Amer. Fish Soc., 76:97-117.

* **Yellow-shafted Flicker:** *Colaptes auratus* (Linnaeus).—Common resident in east, hybridizing with and largely replaced by Red-shafted Flicker westward, in open woodlands. Eggs (6) laid April 11-June 10 (May 10). *C. a. auratus* occurs in southeastern Kansas, *C. a. luteus* Bangs in remainder; all populations show morphologic

intergradation with *Colaptes cafer,* and most individuals are of hybrid stock. *C. a. borealis* Ridgway occurs in northeast in winter.

Sherman, A. R. (1910), At the sign of the northern flicker. Wilson Bull., 22:135-171.

* **Red-shafted Flicker:** *Colaptes cafer* (Gmelin).—Common resident in west, hybridizing with and largely replaced by Yellow-shafted Flicker eastward, in open woodlands. Eggs (6) laid April 11-June 10 (May 10). *C. c. collaris* Vigors occurs in Kansas, showing in all sectors extensive morphologic intergradation with *C. auratus.*

* **Pileated Woodpecker:** *Dryocopus pileatus* (Linnaeus).—Rare and local resident in east, in heavy timber. Seen throughout extreme east in recent years, chiefly in winter; nesting records only from Linn and Cherokee counties. Eggs (3-4) laid April. *D. p. pileatus* occurs in southeastern Kansas, *D. p. abieticola* (Bangs) in northeast.

Hoyt, S. F. (1957), The ecology of the pileated woodpecker. Ecology, 38:246-256.

* **Red-bellied Woodpecker:** *Centurus carolinus* (Linnaeus).—Common resident in east, scattered records in west, in woodland. Eggs (5) laid March 1-June 30 (April 25). *C. c. zebra* (Boddaert) occurs in Kansas.

Selander, R. K., and Giller, D. R. (1959), Interspecific relations of woodpeckers in Texas. Wilson Bull., 71:107-124.

* **Red-headed Woodpecker:** *Melanerpes erythrocephalus* (Linnaeus).—Common summer resident and transient throughout, local winter resident in east, in open woodland. Greatest numbers April-November. Eggs (3-4) laid May 1-August 10 (June 5). *M. e. erythrocephalus* occurs in eastern Kansas, *M. e. caurinus* Brodkorb in central and west.

Kilham, L. (1958), Territorial behavior of wintering red-headed woodpeckers. Wilson Bull., 70:347-358.

Lewis Woodpecker: *Asyndesmus lewis* (Gray).—Possibly rare or irregular resident in southwest; vagrant in east.

Yellow-bellied Sapsucker: *Sphyrapicus varius* (Linnaeus).—Uncommon transient and winter resident, in woodlands. Autumnal arrival September 28-November 14 (October 1), spring departure April 6-24 (April 12). *S. v. varius* occurs in east, *S. v. nuchalis* Baird in west.

Howell, T. R. (1952), Natural history and differentiation in the yellow-bellied sapsucker. Condor, 54:237-282.

[**Williamson Sapsucker:** *Sphyrapicus thyroideus* (Cassin).—Adult male seen April 4, 1935, Concordia, Cloud County (J. M. Porter); no specimen from Kansas.]

* **Hairy Woodpecker:** *Dendrocopos villosus* (Linnaeus).—Common resident, in woodlands. Eggs (4) laid March 21-May 30 (May 5). *D. v. villosus* occurs in Kansas.

* **Downy Woodpecker:** *Dendrocopos pubescens* (Linnaeus).—Common resident, in woodlands. Eggs (4) laid April 11-June 10 (May 5). *D. p. pubescens* occurs in southeast, *D. p. medianus* (Swainson) in remainder of state.

Kilham, L. (1962), Reproductive behavior of downy woodpeckers. Condor, 64:126-133.

Ladder-backed Woodpecker: *Dendrocopos scalaris* (Wagler).—Common, presumed resident, in open woodland and scrubland in Morton County. *D. s. symplectus* (Oberholser) occurs in Kansas.

* **Eastern Kingbird:** *Tyrannus tyrannus* (Linnaeus).—Common transient and summer resident, most numerous in east, in open country and woodland edge. Spring arrival April 22-30 (April 28), autumnal departure September 1-24 (September 13). Eggs (3.3) laid May 11-July 20 (June 15).

* **Western Kingbird:** *Tyrannus verticalis* (Say).—Common transient and summer resident west of Flint Hills, local farther to east, in edge habitats. Spring arrival April 22-30 (April 28), autumnal departure September 1-26 (September 8). Eggs (3.6) laid May 11-July 31 (June 15).

Cassin Kingbird: *Tyrannus vociferans* Swainson.—Transient and summer resident in west, east to Finney County; presumably breeds. One specimen: 7½ miles north Elkhart, Morton County, May 26, 1950 (Graber and Graber, 1951:156). *T. v. vociferans* occurs in Kansas.

* **Scissor-tailed Flycatcher:** *Muscivora forficata* (Gmelin).—Common summer resident aside from northwest, in open country with scattered trees. Spring arrival April 15-28 (April 18), autumnal departure September 21-October 22 (October 12). Eggs (3.2) laid May 21-July 10 (June 25).

Fitch, F. W. (1950), Life history and ecology of the scissor-tailed flycatcher, *Muscivora forficata*. Auk, 67:145-168.

* **Great Crested Flycatcher:** *Myiarchus crinitus* (Linnaeus).—Common transient and summer resident, most numerous in east, in

woodland and edge. Spring arrival April 15-May 4 (April 29), autumnal departure September 1-21 (September 9). Eggs (4.8) laid May 11-July 10 (June 5).

Gillespie, J. A. (1924), Some nestings of the crested flycatcher. Auk, 41:41-44.

* **Ash-throated Flycatcher:** *Myiarchus cinerascens* (Lawrence).—Summer resident in open woodland, at least in Morton County. Breeding status inferred from adult males (KU 41627, 45566) with enlarged testes taken about 7 miles north of Elkhart, Morton County, July 17, 1963, and July 12, 1964 (Rising and Kilgore, 1964); one other specimen, from 8 miles south Richfield, Morton County, May 7, 1950 (Graber and Graber 1951:156). *M. c. cinerascens* occurs in Kansas.

* **Eastern Phoebe:** *Sayornis phoebe* (Latham).—Common transient and summer resident in woodland edge, frequently near water. Most abundant in east. Spring arrival March 3-31 (March 22), autumnal departure October 3-27 (October 9). Eggs (4.2) laid March 21-July 20 (April 25; June 5). Important host of Brown-headed Cowbird.

Smith, W. P. (1942), Nesting habits of the eastern phoebe. Auk, 59: 410-417.

* **Say Phoebe:** *Sayornis saya* (Bonaparte).—Common western transient and summer resident, in open country. Occurs in small numbers east to Republic, Cloud (breeds), and Lyon counties. Spring arrival April 4-22 (April 12), no information on departure. Eggs (5) laid May 1-July 20. *S. s. saya* breeds in Kansas, *S. s. yukonensis* Bishop is transient.

Yellow-bellied Flycatcher: *Empidonax flaviventris* (Baird and Baird).—Uncommon transient, mainly in east, in woodland. Recorded April 14-October 24.

* **Acadian Flycatcher:** *Empidonax virescens* (Vieillot).—Uncommon summer resident in east, in open woodlands. Spring arrival April 30-May 19 (May 9), autumnal departure September 3-17 (September 15). Eggs (3) laid late May-early June.

Newman, D. L. (1958), A nesting of the acadian flycatcher. Wilson Bull., 70:130-144.

* **Traill Flycatcher:** *Empidonax traillii* (Audubon).—Transient throughout, rare summer resident along streams in east. Spring arrival May 19-May 25, autumnal departure August 14-September 24. Eggs (3.4) laid May 21-July 10 (June 15).

McCabe, R. A. (1951), The song and song-flight of the alder flycatcher. Wilson Bull., 63:89-98.

Least Flycatcher: *Empidonax minimus* (Baird and Baird).—Common transient, in open woodlands. Spring arrival April 20-May 15 (May 8), autumnal departure September 5-24 (September 17); sight records and specimens taken in summer (Gove, Trego, Rawlins, Wallace, Phillips, and Stafford counties) but no evidence of breeding to date.

Davis, D. E. (1959), Observations on territorial behavior of least flycatchers. Wilson Bull., 71:73-85.

Wright Flycatcher: *Empidonax oberholseri* Phillips.—Rare transient in extreme west. Three specimens: May 8, 12, 1950, 8 miles south Richfield, Morton County (Graber and Graber, 1951:157).

Western Flycatcher: *Empidonax difficilis* Baird.—Rare transient in extreme west. One specimen (KU 31203): September 5, 1952, 8 miles south Richfield, Morton County; another September 3, 1952, same locality. *E. d. hellmayri* Brodkorb occurs in Kansas.

Davis, J., Fisler, G., and Davis, B. (1963), The breeding biology of the western flycatcher. Condor, 65:337-382.

* **Eastern Wood Pewee:** *Contopus virens* (Linnaeus).—Common transient and summer resident in east, uncommon in west, in woodland and forest edge. Spring arrival April 2-May 28 (May 19), autumnal departure August 30-September 18 (September 6). Eggs (3) laid June 1-July 20 (June 15).

Kendeigh, S. C. (1952), Parental care and its evolution in birds. Illinois Biol. Monog., 22:x + 358 pp.

* **Western Wood Pewee:** *Contopus richardsonii* (Swainson).—Common transient and local summer resident in west, rare transient in east, in woodland and edge. Arrives southwest at least by first week in May. *C. r. richardsonii* occurs in Kansas.

Olive-sided Flycatcher: *Nuttallornis borealis* (Swainson).—Uncommon transient. Favorable habitat includes tall trees where birds characteristically perch and call. Observed April 28-May 30 (May 1), August 29-October 31 (September 11).

* **Horned Lark:** *Eremophila alpestris* (Linnaeus).—Common resident, transient, and winter resident, in open country with short vegetation. Eggs (3.5) laid March 11-June 10 (March 25). *E. a. praticola* (Henshaw) is resident in eastern sectors, *E. a. leucolaema* (Coues) in western; *E. a. hoyti* (Bishop) and *E. a. alpestris* occur in winter.

[**Violet-green Swallow:** *Tachycineta thalassina* (Swainson).—Five birds seen Lake Shawnee, Shawnee County, April 14, 1947, by L. B. Carson (Tordoff, 1956:335).]

* **Tree Swallow:** *Iridoprocne bicolor* (Vieillot).—Common transient in east and central sectors, local summer resident Doniphan County. Spring arrival April 5-April 30 (April 24), autumnal departure September 3-October 21 (October 8). Eggs (5.5) laid May 21-June 20 (May 25).

Paynter, R. A. (1954), Interrelations between clutch-size, brood-size, prefledging survival, and weight in Kent Island tree swallows. Bird-Banding, 25:35-58, 102-110, 136-148.

* **Bank Swallow:** *Riparia riparia* (Linnaeus).—Common transient and summer resident, where cut-banks for sites of nesting colonies allow. Spring arrival April 7-May 19 (May 7), autumnal departure September 3-20 (September 10). Eggs (4.8) laid May 11-June 30 (June 5). *R. r. riparia* occurs in Kansas.

Peterson, A. J. (1955), The breeding cycle in the bank swallow. Wilson Bull., 67:235-286.

* **Rough-winged Swallow:** *Stelgidopteryx ruficollis* (Vieillot).—Common transient and summer resident. Spring arrival March 29-May 30 (April 22), autumnal departure September 23-October 21 (October 10). Eggs (5.0) laid May 11-June 30 (June 5). *S. r. serripennis* (Audubon) occurs in Kansas.

Lunk, W. (1963), The rough-winged swallow (*Stelgidopteryx ruficollis*): a study based on its breeding biology in Michigan. Publ. Nuttall Ornith. Club, 4:1-155.

* **Barn Swallow:** *Hirundo rustica* Linnaeus.—Common transient and summer resident over most of state. Spring arrival March 31-April 29 (April 21), autumnal departure September 22-October 25 (October 7). Eggs (4.7) laid May 1-August 10 (May 15 in south, May 25 in north). *H. r. erythrogaster* Boddaert occurs in Kansas.

Purchon, R. D. (1948), The nesting activities of the swallow. Proc. Zool. Soc. London, 118:146-170.

* **Cliff Swallow:** *Petrochelidon pyrrhonota* (Vieillot).—Common transient and local summer resident, frequently near water, cultivated fields and pasture. Spring arrival April 10-May 27 (May 11), autumnal departure September 3-October 25 (September 11). Eggs (4.9) laid May 21-June 30 (June 5). *P. p. pyrrhonotoa* occurs in Kansas.

Mayhew, W. W. (1958), The biology of the cliff swallow in California. Condor, 60:7-37.

* **Purple Martin:** *Progne subis* (Linnaeus).—Common transient and summer resident in east, local west of line from Barber to Smith counties; has nested at least west to Oberlin, Decatur County (Wolfe, 1961). Spring arrival March 5-April 9 (March 26),

autumnal departure August 28-September 23 (September 3). Eggs (4.2) laid May 11-June 20 (June 5). *P. s. subis* occurs in Kansas.

Allen, R. W., and Nice, M. M. (1952), A study of the breeding biology of the purple martin (*Progne subis*). Amer. Midl. Nat., 47:606-665.

* **Blue Jay:** *Cyanocitta cristata* Linnaeus.—Common resident and transient, in woodlands. Eggs (4.1) laid April 10-July 10 (May 15). *C. c. bromia* Oberholser occurs in Kansas.

Hardy, J. W. (1961), Studies in behavior and phylogeny of certain New World jays (Garrulinae). Univ. Kansas Sci. Bull., 42:13-149.

Steller Jay: *Cyanocitta stelleri* (Gmelin).—Rare winter visitant in west; several sight records recently, especially westerly on Arkansas River. One specimen: Riley County, date unknown (KU 34263). *C. s. macrolopha* Baird occurs in Kansas.

Pitelka, F. A. (1958), The timing of molt in Steller jays of the Queen Charlotte Islands, British Columbia. Condor, 60:38-49.

Scrub Jay: *Aphelocoma coerulescens* (Bosc).—Low density winter resident in southwest. Specimens and sight records from Morton and Finney counties, November 8-January 15. *A. c. woodhouseii* (Baird) occurs in Kansas.

Amadon, D. (1944), A preliminary life-history study of the Florida jay, *Cyanocitta c. coerulescens*. Amer. Mus. Novit., no. 1252.

Mexican Jay: *Aphelocoma ultramarina* (Bonaparte).—Vagrant or irregular winter visitant in southwest. One specimen: near Mt. Jesus, Clark County, March, 1906; repeated sight records (1 bird) February-March, 1961, Dodge City, Ford County (Mrs. A. R. Challans).

* **Black-billed Magpie:** *Pica pica* (Linnaeus).—Common resident in west since mid-1920s (Linsdale, 1926), in wooded bottomlands and adjacent areas. Eggs (about 7) laid April 11-June 20 (May 15). *P. p. hudsonia* (Sabine) occurs in Kansas.

Common Raven: *Corvus corax* Linnaeus.—Rare winter visitant in west, formerly more numerous, vagrant in east. One specimen (KU 34264): Jewell County, date unknown. *C. c. sinuatus* Wagler occurs in Kansas.

Harlow, R. C. (1922), The breeding habits of the northern raven in Pennsylvania. Auk, 39:399-410.

* **White-necked Raven:** *Corvus cryptoleucus* Couch.— Common summer resident in west, near woodlands and bottomlands. Overwinters locally in southwest. Eggs (5.8) laid April 11-June 10.

Selous, S. E. (1942), The white-necked raven in relation to agriculture. U. S. Fish and Wildlife Serv. Res. Rept. no. 5.

* **Common Crow:** *Corvus brachyrhynchos* Brehm.—Common resident, less numerous in west, numbers seemingly augmented in winter by influx from north. Eggs (4.2) laid March 10-May 31 (April 5). *C. b. brachyrhynchos* occurs in Kansas.

Platt, D. (1956), Food of the crow *Corvus brachyrhynchos* Brehm, in south-central Kansas. Univ. Kansas Publ. Mus. Nat. Hist., 8:477-498.

Pinon Jay: *Gymnorhinus cyanocephalus* Wied.—Irregular winter visitant, chiefly west. Reported from Douglas, Sedgwick, Mitchell, Clark, Finney, and Kearny counties.

Clark Nutcracker: *Nucifraga columbiana* (Wilson).—Irregular winter visitant, chiefly west. Reported from Marshall, Ellis, Lyon, Finney, Seward, and Johnson counties.

Mewaldt, L. R. (1956), Nesting behavior of the Clark nutcracker. Condor, 58:2-23.

* **Black-capped Chickadee:** *Parus atricapillus* Linnaeus.—Common resident except in southernmost tier of counties, in woodland; found throughout state in winter. Eggs (5.4) laid March 21-June 10 (April 15). *P. a. atricapillus* occurs in eastern Kansas, *P. a. septentrionalis* Harris in west.

Odum, E. P., (1941-1942), Annual cycle of the black-capped chickadee. Auk, 58:314-333, 518-535; 59:499-531.

* **Carolina Chickadee:** *Parus carolinensis* Audubon.—Common resident in southernmost counties, from Comanche County east, in woodland, characteristically in canopy of trees. Eggs (about 5) laid presumably March-June. *P. c. atricapilloides* Lunk occurs in Kansas.

Brewer, R. (1961), Comparative notes on the life history of the Carolina chickadee. Wilson Bull., 73:348-373.

* **Tufted Titmouse:** *Parus bicolor* Linnaeus.—Common resident east of a line from Cloud to Sumner counties, but probably breeds in Barber County, in woodland. Eggs (4.5) laid March 21-June 10 (April 25).

Lasky, A. R. (1957), Some tufted titmouse life history. Bird-Banding, 28:135-145.

* **White-breasted Nuthatch:** *Sitta carolinensis* Latham.—Low-density resident and winter visitant, most often in oak woodland. Eggs (5-10) laid March-April. *S. c. cookei* Oberholser occurs nearly throughout Kansas, *S. c. carolinensis* in extreme southeast. *S. c. nelsoni* Mearns recorded from Morton County but probably does not breed.

Butts, W. K. (1930, 1931), A study of the chickadee and white-breasted nuthatch by means of marked individuals. Bird-Banding, 1:149-168; 2:1-26, 59-76.

Red-breasted Nuthatch: *Sitta canadensis* Linnaeus.—Uncommon transient, local winter resident, most conspicuously around planted conifers. Autumnal arrival September 11-October 28 (October 23), departure in spring April 4-May 6 (April 28).

Gunderson, A. (1939), Nesting habits of the red-breasted nuthatch. Condor, 41:259-260.

Pygmy Nuthatch: *Sitta pygmaea* Vigors.—Winter visitant; flock of 10 seen in Wichita, Sedgwick County, from November 23, 1961-January 13, 1962. One specimen (KU 40962): Wichita, Sedgwick County, December 30, 1961 (Thompson and Holmes, 1963). S. *p. melanotis* van Rossem occurs in Kansas.

Norris, R. A. (1958), Comparative biosystematics and life history of the nuthatches Sitta pygmaea and Sitta pusilla. Univ. California Publ. Zool., 56:119-300.

Brown Creeper: *Certhia familiaris* Linnaeus.—Low-density transient and winter resident in woodlands. Autumnal arrival September 26-October 30 (October 18), spring departure April 2-22 (April 12). *C. f. americana* Bonaparte occurs in Kansas.

* **House Wren:** *Troglodytes aedon* Vieillot.—Common summer resident in woodlands and towns. Spring arrival April 3-27 (April 19), autumnal departure September 19-October 13 (September 30). Eggs (5.8) laid April 11-July 31 (May 20). *T. a. parkmanii* Audubon occurs in Kansas.

Winter Wren: *Troglodytes troglodytes* (Linnaeus).—Uncommon or rare transient, local winter resident, in heavy cover in woodlands. Arrives October 13-November 16 (October 26), departs April 18-28. *T. t. hiemalis* Vieillot occurs in Kansas.

Armstrong, E. A. (1955), The wren. Collins, London.

* **Bewick Wren:** *Thryomanes bewickii* (Audubon).—Common resident southerly and easterly, rare northwesterly, in woodland understory. Eggs (5.5) laid March 21-July 10 (April 15). *T. b. bewickii* occurs in northeastern sector, *T. b. cryptus* Oberholser in remainder.

Miller, E. V. (1941), Behavior of the Bewick wren. Condor, 43:81-99.

* **Carolina Wren:** *Thryothorus ludovicianus* (Latham).—Common resident in south, less numerous north and west, in edge habitats. Eggs (4.2) laid April 11-August 10 (April 15). *T. l. ludovicianus* occurs in Kansas.

Lasky, A. R. (1948), Some nesting data on the Carolina wren at Nashville, Tennessee. Bird-Banding, 17:101-121.

* **Long-billed Marsh Wren:** *Telmatodytes palustris* (Wilson).—Uncommon transient, uncommon summer resident east, rare winter visitant south, in and about marshes. Spring arrival April 19-29 (April 22), autumnal departure September 26-October 31 (October 8). Eggs (5) laid May-August. *T. p. dissaeptus* (Bangs) breeds in Kansas, *T. p. plesius* (Oberholser) occurs in winter.

Welter, W. A. (1935), The natural history of the long-billed marsh wren. Wilson Bull., 47:1-34.

* **Short-billed Marsh Wren:** *Cistothorus platensis* (Latham).—Uncommon transient, irregular local summer resident in east, in wet meadows. Recorded in state April 29-October 25. Eggs (6) laid July-August. *C. p. stellaris* (Nauman) occurs in Kansas.

* **Rock Wren:** *Salpinctes obsoletus* (Say).—Common summer resident in west in xeric, rocky country. Present April 2-October 25. Eggs (4.6) May 11-July 20. *S. o. obsoletus* occurs in Kansas.

* **Northern Mockingbird:** *Mimus polyglottos* (Linnaeus).—Regular resident in parklands. Eggs (5.4) laid April 21-July 31 (June 5). *M. p. leucopterus* (Vigors) occurs in western Kansas, *M. p. polyglottos* in eastern.

Lasky, A. R. (1962), Breeding biology of mockingbirds. Auk, 79:596-606.

* **Catbird:** *Dumetella carolinensis* (Linnaeus).—Common transient and summer resident, in and near woodland habitats and established second-growth. Spring arrival April 25-May 14 (May 6), fall departure September 20-November 16 (September 26). Eggs (3.3) laid May 11-July 31 (May 25).

Kendeigh, S. C. (1952), Parental care and its evolution in birds. Illinois Biol. Monogr., 22:x + 358 pp.

* **Brown Thrasher:** *Toxostoma rufum* (Linnaeus).—Common transient and summer resident, rare winter resident, in woodland habitats and established second-growth. Spring arrival April 1-25 (April 19), fall departure September 19-October 13 (September 28). Eggs (3.6) laid May 1-July 20 (May 15). *T. r. rufum* occurs in eastern Kansas, *T. r. longicauda* Baird in west.

Engels, W. L. (1940), Structural adaptations in thrashers (Mimidae: Genus *Toxostoma*) . . . Univ. California Publ. Zool., 42:341-400.

* **Sage Thrasher:** *Oreoscoptes montanus* (Townsend).—Rare or inconspicuous in west, in scrub habitats. Five specimens, July, September-November, Finney and Morton counties. Breeding record: one fledged young from sagebrush flats along Cimarron River, 7 miles north, 2 miles east Elkhart, July 17, 1963 (Johnston, 1963).

* **Robin:** *Turdus migratorius* Linnaeus.—Common transient and summer resident in open woodland and towns, local winter resident in favorable sites. Non-wintering birds arrive March, depart October. Eggs (3.6) laid April 1-July 20 (April 25). *T. m. migratorius* occurs in most of Kansas, *T. m. propinquus* Ridgway is transient, chiefly in west.

Young, H. (1955), Breeding behavior and nesting of the eastern robin. Amer. Midl. Nat., 53:329-352.

Varied Thrush: *Ixoreus naevius* (Gmelin).—Vagrant. One specimen taken October 17, 1891, Garden City, Finney County (Menke, 1894), present location unknown, presumably lost. *I. n. meruloides* (Swainson) on geographic considerations occurs in Kansas.

* **Wood Thrush:** *Hylocichla mustelina* (Gmelin).—Common transient and summer resident in understory of forest and woodland. Has nested as far west as Oberlin, Decatur County (Wolfe, 1961), but present western limits of range probably in Cloud County. Spring arrival April 19-May 20 (May 9), fall departure September 3-October 1 (September 15). Eggs (3.4) laid May 11-August 10 (June 5).

Brackbill, H. (1958), Nesting behavior of the wood thrush. Wilson Bull., 70:70-89.

Hermit Thrush: *Hylocichla guttata* (Pallas).—Uncommon transient throughout, rare in winter in east, in woodland situations. Seen most frequently March, April, May. *H. g. faxoni* Bangs and Penard occurs in eastern Kansas, *H. g. sequoiensis* (Belding) vagrant in west.

Swainson Thrush: *Hylocichla ustulata* (Nuttall).—Common transient, in woodland understory and edge. Spring arrival April 23-30 (27), departure May 17-June 1 (May 22), autumnal arrival September 3-13 (9), departure October 7, 25. *H. u. swainsoni* (Tschudi) occurs in Kansas.

Dilger, W. C. (1956), Hostile behavior and reproductive isolating mechanisms in the avain genera *Catharus* and *Hylocichla*. Auk, 73:313-353.

Gray-cheeked Thrush: *Hylocichla minima* (Lafresnaye).—Medium-density transient in east, not yet reported from west, in woodland understory and edge. Spring arrival April 11-30 (April 27), departure May 14-20 (May 16), not recorded in autumn. *H. m. minima* occurs in Kansas.

Wallace, G. J. (1939), Bicknell's thrush, its habits, distribution, and life history. Proc. Boston Soc. Nat. Hist., 41, no. 6.

Veery: *Hylochichla fuscescens* (Stephens).—Rare or low-density transient, more numerous in west, in woodland habitats. Present in spring April 30-May 19, in autumn September 8-28. *H. f. salicicola* Ridgway occurs in Kansas.

* **Eastern Bluebird:** *Sialia sialis* (Linnaeus).—Locally common resident and summer resident in east, in woodland edge; casual west of Comanche County. Eggs (4.9) laid April 1-July 20 (April 25). *S. s. sialis* occurs in Kansas.

Thomas, R. H. (1946), A study of the eastern bluebird in Arkansas. Wilson Bull., 58:143-183.

Mountain Bluebird: *Sialia currucoides* (Bechstein).—Common transient and winter resident in west, in open country with scattered trees. Present in low density east to Cloud County (November-March), irregularly to Douglas and Anderson counties. Possible breeding record: female juvenile (KU 5900) from northwest of Coolidge, Hamilton County, June 20, 1911.

Haecker, F. W. (1948), A nesting study of the mountain bluebird in Wyoming. Condor, 50:216-219.

Townsend Solitaire: *Myadestes townsendi* (Audubon).—Uncommon winter resident in west, irregular in east, in woodland edge situations. Present September 17-May 15, most numerous midwinter. *M. t. townsendi* occurs in Kansas.

Blue-gray Gnatcatcher: *Polioptila caerulea* (Linnaeus).—Common transient and summer resident in east, little information from west but probably breeds there, in woodland and edge. Present March 30-September 18. Eggs (5) laid April 20-June 20 (May 10). *P. c. caerulea* occurs in Kansas.

Nice, M. M. (1932), Observations on the nesting of the blue-gray gnatcatcher. Condor, 34:18-22.

Golden-crowned Kinglet: *Regulus satrapa* Lichtenstein.—Common transient, uncommon winter resident, in woodland. Autumnal arrival October 8-22 (October 13), spring departure March 31-April 16 (April 6). *R. s. satrapa* occurs in Kansas.

Ruby-crowned Kinglet: *Regulus calendula* (Linnaeus).—Common transient, rare winter resident, in woodland and edge. Fall arrival September 8-October 6 (September 25), movement south over by early November; spring arrival begins late March, departure May 1-18 (May 9). *R. c. calendula* occurs in Kansas.

Water Pipit: *Anthus spinoletta* (Linnaeus).—Common transient in open country. Spring arrival March 7-April 11 (March 21), departure April 30-May 26 (May 8); fall arrival September 25-

October 12 (October 11), departure October 17-November 27 (October 27). Recorded occasionally both midsummer (Cloud County, July 9) and midwinter (eastern sector, several dates). *A. s. rubescens* (Tunstall) occurs in Kansas.

Pickwell, G. B. (1947), The American pipit in its arctic-alpine home. Auk, 64:1-14.

Sprague Pipit: *Anthus spragueii* (Audubon).—Transient throughout state, common in Flint Hills sector, chiefly in bluestem grassland. Present January 20-April 29, September 15-October 13.

Harris, R. D. (1933), Observations on a nest of Sprague's pipit (*Anthus spragueii*). Canadian Field-Nat., 47:91-95.

Bohemian Waxwing: *Bombycilla garrulus* (Linnaeus).—Irregular winter visitant in woodland edge and urban habitats. Recorded November-March. *B. g. pallidiceps* Reichenow occurs in Kansas.

* **Cedar Waxwing:** *Bombycilla cedrorum* Vieillot.—Common transient and winter resident, rare summer resident, in woodlands and townsites. Eggs (4) laid June-July (Wyandotte and Shawnee counties only).

Putnam, L. S. (1949), Life history of the cedar waxwing. Wilson Bull., 71:141-182.

Northern Shrike: *Lanius excubitor* Linnaeus.—Irregular, low-density winter visitant and winter resident, in edge habitats. Arrival October 5-November 6 (November 2), departure March 3-23 (March 9). *L. e. borealis* Vieillot occurs in eastern Kansas, *L. e. invictus* Grinnell in west.

Cade, Tom J. (1962), Wing movements, hunting, and displays of the northern shrike. Wilson Bull., 74:386-408.

* **Loggerhead Shrike:** *Lanius ludovicianus* Linnaeus.—Common resident and transient, shifting southward in winter, in open and edge habitats. Almost fully migratory in northern counties: spring arrival March 9-31 (March 21), departure October 19-December 19 (November 1). Eggs (5.3) laid April 1-June 30 (April 15). *L. l. migrans* Palmer occurs in eastern Kansas, *L. l. excubitorides* Grinnell in west.

Miller, A. H. (1931), Systematic revision and natural history of the American shrikes (Lanius). Univ. California Publ. Zool., 38:11-242.

* **Starling:** *Sturnus vulgaris* Linnaeus.—Common resident in towns and on farms since 1930s; first appeared early thirties, first bred 1935. Eggs (5.2) laid March 1-June 30 (April 15). Kansan birds stem from stock called S. *v. vulgaris*.

Thompson, W. L., and Coutlee, E. (1963), The biology and population structure of starlings at an urban roost. Wilson Bull., 75:358-372.

* **Black-capped Vireo:** *Vireo atricapilla* Woodhouse.—Summer resident, at least formerly in Comanche County, in oak woodland and scrub; not seen in recent years in breeding habitat. Goss (1891:531) shot three pairs in mid-May and found a nest under construction on May 11, 1885, in southeastern Comanche County. Sight records recently from Riley and Harvey counties (Tordoff, 1956:341).

Graber, J. W. (1961), Distribution, habitat requirements, and life history of the black-capped vireo (*Vireo atricapillus*). Ecol. Monogr., 31:313-336.

* **White-eyed Vireo:** *Vireo griseus* (Boddaert).—Common transient and summer resident locally in east, in woodland areas. Present April 23-October 5. Eggs (3.6) laid May 10-June 30 (June 10). *V. g. noveboracensis* (Gmelin) occurs in Kansas.

Nolan, V., Jr., and Wooldridge, D. P. (1962), Food habits and feeding behavior of the white-eyed vireo. Wilson Bull., 74:68-73.

* **Bell Vireo:** *Vireo bellii* Audubon.—Common transient and summer resident in riparian and second-growth scrub. Spring arrival April 14-May 20 (May 8), fall departure August 26-September 27 (September 6). Eggs (4.6) laid May 1-July 20 (May 25). *V. b. bellii* occurs in Kansas.

Barlow, J. C. (1962), Natural history of the Bell vireo, Vireo bellii Audubon. Univ. Kansas Publ. Mus. Nat. Hist., 12:241-296.

* **Yellow-throated Vireo:** *Vireo flavifrons* Vieillot.—Uncommon transient and rare, local summer resident in woodlands. Spring arrival April 27-May 22 (May 7), autumnal departure August 23-October 1 (August 31). Eggs (4) laid in May.

Solitary Vireo: *Vireo solitarius* (Wilson).—Medium-density transient in woodland. Present April 23-May 20 (peak May 7), August 29-October 22 (peak October 8). *V. s. solitarius* occurs in eastern Kansas, *V. s. plumbeus* Coues in west.

Hamilton, T. (1958), Adaptive variation in the Genus *Vireo*. Wilson Bull., 70:307-346.

* **Red-eyed Vireo:** *Vireo olivaceus* (Linnaeus).—Common transient and summer resident in woodlands. Spring arrival April 16-May 10 (May 4), fall departure September 2-October 7 (September 10). Eggs (4) laid May 21-July 31 (June 5). *V. o. olivaceus* occurs in Kansas.

Lawrence, L. de K. (1953), Nesting life and behavior of the red-eyed vireo. Canadian Field-Nat., 67:47-77.

Philadelphia Vireo: *Vireo philadelphicus* (Cassin).—Uncommon transient in east in woodland; recorded west to Harvey and Cloud

counties. Spring occurrence April 25-May 21 (May 4), present in autumn September 2-October 1.

Lewis, H. F. (1921), A nesting of the Philadelphia vireo. Auk, 38: 185-202.

* **Warbling Vireo:** *Vireo gilvus* (Vieillot).—Common transient and summer resident, in woodland. Spring arrival April 15-May 9, fall departure September 2-October 6 (September 9). Eggs (3.6) laid May 1-June 20 (June 5). *V. g. gilvus* occurs in Kansas.

* **Black-and-white Warbler:** *Mniotilta varia* (Linnaeus).—Common transient in state, local summer resident in east, in woodland. Spring arrival April 2-May 12 (May 5), autumnal departure September 10-October 14 (September 22). Eggs (5) laid May, June.

Smith, W. P. (1934), Observations of the nesting habits of the black and white warbler. Bird-Banding, 5:31-35.

* **Prothonotary Warbler:** *Protonotaria citrea* (Boddaert).—Local transient and summer resident in east, in understory of riparian or swampy woodland. Spring arrival April 24-May 25 (May 8), fall departure August 6-September 10 (August 22). Eggs (4.5) laid May 11-July 10 (June 5).

Walkinshaw, L. H. (1953), Life-history of the prothonotary warbler. Wilson Bull., 65:152-168.

Swainson Warbler: *Limnothlypis swainsonii* (Audubon).—Rare transient in east, in riparian thickets. One specimen (KU 33464): east shore Lake Quivira, Johnson County, May 11, 1957 (Hardy, 1957:10).

Meanley, B. (1945), Notes on Swainson's warbler in central Georgia. Auk, 62:395-401.

Worm-eating Warbler: *Helmitheros vermivorus* (Gmelin).—Rare transient and possible summer resident in east, in shaded undergrowth in mature woodland. Recorded April 23-May 6 (May 1), July 11, and September 10.

Golden-winged Warbler: *Vermivora chrysoptera* (Linnaeus).—Rare transient in east, in woodland. Recorded only in first two weeks of May; specimens from Douglas County woodlands (Hall, 1921:607; Hardy and Ford, 1957:8).

Parkes, K. C. (1951), The genetics of the golden-winged x blue-winged warbler complex. Wilson Bull., 63:5-15.

Blue-winged Warbler: *Vermivora pinus* (Linnaeus).—Uncommon transient, possible summer resident, in east in woodland edge and heavy second growth. Recorded April 20-June 2 (May 12), August 26-October 10 (September 4).

For reference see Golden-winged Warbler.

Tennessee Warbler: *Vermivora peregrina* (Wilson).—Common transient in east, uncommon in west, in woodland. Present April 18-June 9 (May 8), September 8-October 22 (September 21).

Orange-crowned Warbler: *Vermivora celata* (Say).—Common transient, inconspicuous winter resident, in woodlands. Spring arrival April 14-30 (April 25), departure May 2-17 (May 9); fall arrival September 10-29 (September 18), departs October 2-19 (October 13); sight records in most winter months, specimens (KU) for January 3, 13, and 20. *V. c. celata* occurs throughout state, *V. c. orestera* Oberholser in west.

Nashville Warbler: *Vermivora ruficapilla* (Wilson).—Common transient in woodland and second-growth. Present in spring April 25-May 17, arrives in fall August 29-September 22 (September 3), departs October 4-27 (October 14). *V. r. ruficapilla* occurs in Kansas.

Lawrence, L. de K. (1948), Comparative study of the nesting behavior of chestnut-sided and Nashville warblers. Auk, 65:204-219.

Virginia Warbler: *Vermivora virginiae* (Baird). — Uncommon transient in west, in riparian thickets and scrub. Two specimens: 8 miles south Richfield, Morton County, May 4, 10, 1950 (Graber and Graber, 1951:164).

* **Parula Warbler:** *Parula americana* (Linnaeus).—Fairly common transient and summer resident in east, in woodland. Spring arrival March 31-May 5 (April 23), autumnal departure September 12-October 7 (September 18). Eggs (4) laid mid-May-mid-June.

Graber, R., and Graber, J. (1951), Nesting of the parula warbler in Michigan. Wilson Bull., 63:75-83.

* **Yellow Warbler:** *Dendroica petechia* (Linnaeus).—Common transient and summer resident in woodland and riparian groves. Spring arrival April 21-May 7 (April 30), fall departure August 28-October 1 (September 4). Eggs (4.2) laid May 11-June 20 (May 25). *D. p. aestiva* (Gmelin) breeds in eastern Kansas, *D. p. morcomi* Coale in southwest; *D. p. rubiginosa* (Pallas) transient throughout. For remarks on *D. p. sonorana* Brewster in Kansas see Johnston (1964:638).

Schrantz, F. C. (1943), Nest life of the eastern yellow warbler. Auk, 60:367-387.

Magnolia Warbler: *Dendroica magnolia* (Wilson). — Uncommon transient in woodland. Present May 10-20 (12), September 21-October 5.

Nice, M. M. (1926), A nesting study of magnolia warblers. Wilson Bull., 38:185-199.

Cape May Warbler: *Dendroica tigrina* (Gmelin).—Rare transient in east, in woodland. One specimen (KU 31644): Lawrence, Douglas County, December 6, 1954.

MacArthur, R. H. (1958), Population ecology of some warblers of northeastern coniferous forests. Ecology, 39:599-619.

Black-throated Blue Warbler: *Dendroica caerulescens* (Gmelin). —Rare transient, in woodland. Present (chiefly west) in May, September, October. *D. c. caerulescens* occurs in Kansas.

Nice, M. M. (1930), A study of nesting black-throated blue warblers. Auk, 47:338-345.

Myrtle Warbler: *Dendroica coronata* (Linnaeus). — Common transient, rare winter resident, in woodland. Transients arrive spring March 30-April 20 (April 16), depart May 7-25 (May 8), arrive autumn September 3-October 4 (October 1), depart October 18-November 3 (October 23); sight records, specimens, for all winter months. *D. c. coronata* and *D. c. hooveri* McGregor occur in Kansas.

For reference see Cape May Warbler.

Audubon Warbler: *Dendroica auduboni* (Townsend).—Transient, common in west, uncommon in east, in woodland. Recorded October 1-November 8. *D. a. auduboni* occurs in Kansas.

Black-throated Gray Warbler: *Dendroica nigrescens* (Townsend).—Transient in west in woodland. Sight records and four specimens, 8 miles south Richfield, Morton County, May 8-13, 1950 (Graber and Graber, 1951:165).

Townsend Warbler: *Dendroica townsendi* (Townsend).—Transient in west, in woodland. Sight records and two specimens, 8 miles south Richfield, Morton County, May 3-20, 1950, September 3-5, 1952.

Black-throated Green Warbler: *Dendroica virens* (Gmelin).— Transient, uncommon in east, rare in west, in woodland. Autumnal passage August 27-October 19 (October 4), spring passage April 30-May 28 (May 7). *D. v. virens* occurs in Kansas.

Pitelka, F. A. (1940), Breeding behavior of the black-throated green warbler. Wilson Bull., 52:3-18.

Cerulean Warbler: *Dendroica cerulea* (Wilson).—Uncommon transient, possible summer resident, in east, in mature woodland. Recorded April 30-September 13.

Blackburnian Warbler: *Dendroica fusca* (Müller).—Uncommon transient in east, rare in west, in woodland. Spring passage April 29-May 22, in autumn in September.

Lawrence, L. de K. (1953), Notes on the nesting behavior of the blackburnian warbler. Wilson Bull., 65:135-144.

[**Yellow-throated Warbler:** *Dendroica dominica* (Linnaeus).—Sight records in east; possibly breeds extreme east. May be found in mature woodlands, notably about sycamores.]

Chestnut-sided Warbler: *Dendroica pensylvanica* (Linnaeus).—Uncommon but regular transient, less numerous in west, in woodland. Present May 1-22, September 7-October 9.

For reference see Nashville Warbler.

Bay-breasted Warbler: *Dendroica castanea* (Wilson).—Uncommon transient in woodland. Present May 2-26, September 25-October 6.

Mendall, H. L. (1937), Nesting of the bay-breasted warbler. Auk, 54: 429-439.

Blackpoll Warbler: *Dendroica striata* (Forster).—Common transient in east, uncommon in west, in woodland. Spring arrival April 26-May 9 (May 5), departure May 18-25 (May 21); fall movement noted in late October.

Pine Warbler: *Dendroica pinus* (Wilson).—Transient in east, in low numbers. One specimen: Kansas City, Wyandotte County, October 29, 1964 (D. A. Easterla, ms.).

* **Prairie Warbler:** *Dendroica discolor* (Vieillot).—Transient in east, local summer resident in Wyandotte, Johnson, and Cherokee counties (Rising, 1964), in edge habitats, notably between oak-hickory and old field second growth. Present April 29-August 22. Eggs laid at least May and June. *D. d. discolor* occurs in Kansas.

Nolan, V. (1958), Anticipatory food-bringing in the prairie warbler. Auk, 75:263-278.

Palm Warbler: *Dendroica palmarum* (Gmelin).—Uncommon transient, chiefly in east (to Cloud County), in woodland and edge. Present April 27-May 9 (May 3), September 23-October 23 (October 7). *D. p. palmarum* occurs in Kansas.

Walkinshaw, L. H., and Wolf, M. A. (1957), Distribution of the palm warbler and its status in Michigan. Wilson Bull., 69:338-351.

Ovenbird: *Seiurus aurocapillus* (Linnaeus).—Uncommon transient, possible local summer resident (Brumwell, 1951:226), in woodland understory. Present April 29-June 21, August 29-October 6 (but possibly through summer). *S. a. aurocapillus* occurs throughout state, *S. a. cinereus* Miller in west.

Stenger, J., and Fall, J. B. (1959), The utilized territory of the ovenbird. Wilson Bull., 71:125-140.

Northern Waterthrush: *Seiurus noveboracensis* (Gmelin).—Uncommon but regular transient, in undergrowth of wet woodland. Arrives in spring April 2-April 28 (April 16), departs by June 27; present in fall August 23-October 1.

Eaton, S. W. (1957), A life history study of *Seiurus noveboracensis* (with notes on *Seiurus aurocapillus* and the species of *Seiurus* compared). Sci. Stud. St. Bonaventure Univ., 19:7-36.

*** Louisiana Waterthrush:** *Sciurus motacilla* (Vieillot).—Common transient of variable density in east, uncommon summer resident, in woodland understory near streams. Spring arrival March 29-April 30 (April 16), autumnal departure in August. Eggs (5) laid in May, June.

Eaton, S. W. (1958), A life history study of the Louisiana waterthrush. Wilson Bull., 70:211-236.

*** Kentucky Warbler:** *Oporornis formosus* (Wilson).—Common, low-density transient, uncommon summer resident, in eastern woodlands. Spring arrival April 21-May 15 (May 3), autumnal departure mid-September. Eggs (4-5) laid May, June.

Connecticut Warbler: *Oporornis agilis* (Wilson).—Uncommon and inconspicuous transient. Specimens and sight records from Topeka, Shawnee County (L. B. Carson), September and May, from Pittsburg, Crawford County (T. M. Sperry), May 14-28.

Mourning Warbler: *Oporornis philadelphia* (Wilson). — Local transient in east, to Sedgwick and Cloud counties. Present May 13-30, August 23-October 1.

Cox, G. W. (1960), A life history of the mourning warbler. Wilson Bull., 72:5-28.

MacGillivray Warbler: *Oporornis tolmiei* (Townsend).—Regular transient in west, rare in east, within woodlands. Specimens from Hamilton, Morton, and Marshall counties. *O. t. tolmiei* occurs in Kansas.

*** Yellowthroat:** *Geothlypis trichas* (Linnaeus).—Common transient and summer resident throughout state in marshlands. Spring arrival April 21-May 10 (May 3), fall departure September 8-Oc-

tober 3 (September 17). Eggs (5) laid May 11-June 10 (June 1). *G. t. brachydactylus* (Swainson) breeds in eastern sectors, *G. t. occidentalis* Brewster in west.

Stewart, R. E. (1953), A life-history study of the yellow-throat. Wilson Bull., 65:99-115.

* **Yellow-breasted Chat:** *Icteria virens* (Linnaeus).—Common transient and summer resident, in riparian thickets and rank second growth. Spring arrival April 22-May 19 (May 11), autumnal departure August 29-October 1 (September 8). Eggs (4) laid May 11-July 20 (June 5). *I. v. virens* breeds in eastern Kansas, *I. v. auricollis* (Deppe) in western.

Petrides, G. A. (1938), A life history study of the yellow-breasted chat. Wilson Bull., 50:184-189.

* **Hooded Warbler:** *Wilsonia citrina* (Boddaert).—Rare summer resident in east, in wet, open woodland. Present April, May, June. Four specimens (Leavenworth and Shawnee counties), one breeding record (Anderson County).

Odum, E. P. (1931), Notes on the nesting habits of the hooded warbler. Wilson Bull., 43:316-317.

Wilson Warbler: *Wilsonia pusilla* (Wilson).—Common transient, in woodlands. Recorded April 30-May 26, August 23-October 5. *W. p. pusilla* occurs in eastern Kansas, *W. p. pileolata* (Pallas) in west.

Harrison, J. J. (1951), Notes and observations on the Wilson's warbler. Wilson Bull., 63:143-148.

Canada Warbler: *Wilsonia canadensis* (Linnaeus).—Uncommon transient in east, in woodland. Recorded April 9-May 25, August 21-October 1.

* **American Redstart:** *Setophaga ruticilla* (Linnaeus).—Common transient, local summer resident in east, in woodlands. Spring arrival April 22-May 20 (May 12), fall departure September 1-October 7 (September 10). Eggs (4) laid May and June. *S. r. ruticilla* breeds in Kansas, *S. r. tricolora* (Müller) is transient.

Sturm, L. (1945), A study of the nesting activities of the American redstart. Auk, 62:189-206.

* **House Sparrow:** *Passer domesticus* (Linnaeus).—Common resident, around the activities of man. Stock from New York introduced into state in 1874 (Topeka) and 1876 (Lawrence). Eggs (4) laid March 20-July 20 (April 5).

Summers-Smith, D. (1963), The house sparrow. London, Collins.

* **Bobolink:** *Dolichonyx oryzivorus* (Linnaeus).—Irregular transient, occasionally common, local summer resident, in marshy areas

and meadows. Spring arrival May 4-May 21 (May 11), autumnal departure August 28-October 1 (September 12). Eggs (5) laid June (Cloud and Stafford counties).

Hamilton, W. J. III (1962), Bobolink migratory pathways and their experimental analysis under night skies. Auk, 79:208-233.

* **Eastern Meadowlark:** *Sturnella magna* (Linnaeus).—Common transient and summer resident east of Jewell, Stafford, and Barber counties, in lowland fields. Overwintering birds common in east. Eggs (5) laid April 10-July 20 (May 5). *S. m. magna* occurs in northeastern Kansas, *S. m. argutula* Bangs in southeast.

Lanyon, W. E. (1957), The comparative biology of the meadowlarks (*Sturnella*) in Wisconsin. Publ. Nutt. Ornith. Club, 1:1-67.

* **Western Meadowlark:** *Sturnella neglecta* (Audubon).—Transient and summer resident, common west of Flint Hills, local in east, in upland fields. Eggs (4) laid April 10-July 30 (May 5). *S. n. neglecta* occurs in Kansas.

For reference see Eastern Meadowlark.

* **Yellow-headed Blackbird:** *Xanthocephalus xanthocephalus* (Bonaparte).—Common transient, local summer resident, around fields and marshes. Spring arrival March 31-April 29 (April 19), fall departure September 19-October 18 (September 24). Eggs (4) laid May 20-June 30 (June 5).

Nero, R. W. (1963), Comparative behavior of the yellow-headed blackbird, red-winged blackbird, and other icterids. Wilson Bull., 75:376-413.

* **Red-winged Blackbird:** *Agelaius phoeniceus* (Linnaeus).—Common transient and summer resident, low-density winter resident, around parklands and marshes. Eggs (4) laid May 1-July 30 (May 25). *A. p. fortis* (Ridgway) occurs in extreme western Kansas, *A. p. phoeniceus* in remainder.

Nero, R. W. (1956), A behavior study of the red-winged blackbird. Wilson Bull., 68:5-37; 129-150.

* **Orchard Oriole:** *Icterus spurius* (Linnaeus).—Common transient and summer resident, in woodlands. Spring arrival April 18-May 14 (May 2), fall departure August 5-September 15 (August 9). Eggs (4) laid May 11-August 10 (June 5).

Beecher, W. J. (1950), Convergent evolution in the American orioles. Auk, 62:51-86.

Hooded Oriole: *Icterus cucullatus* Swainson.—One record 16 miles southwest Garden City, Finney County, August 5, 1939; specimen (foot only) representative of *I. c. californicus* (Lesson), on geographic grounds.

* **Baltimore Oriole:** *Icterus galbula* (Linnaeus).—Common transient and summer resident, chiefly east, in woodlands. Spring arrival April 18-May 5 (April 28), autumnal departure September 6-29 (September 10). Eggs (4) laid May 11-July 10 (June 5). Hybridizes with *I. bullockii* in western Kansas.

Sibley, C. G., and Short, L. L., Jr. (1964), Hybridization in the orioles of the Great Plains. Condor, 66:130-150.

* **Bullock Oriole:** *Icterus bullockii* (Swainson).—Common transient and summer resident in west, in woodlands. Eggs (4) laid June, July. *I. b. bullockii* occurs in Kansas; hybridizes with *I. galbula.*

Miller, A. H. (1931), Notes on the song and territorial habits of Bullock's oriole. Wilson Bull., 43:102-108.

Rusty Blackbird: *Euphagus carolinus* (Müller).—Transient and local winter resident in east, around fields and marshes. Arrives in fall September 23-October 11 (October 4), departs in spring March 13-April 19 (April 12). *E. c. carolinus* occurs in Kansas.

Brewer Blackbird: *Euphagus cyanocephalus* (Wagler).—Transient and local winter resident, around fields and marshes. Fall arrival September 20-October 30 (October 16), spring departure April 6-30 (April 19).

Williams, L. (1952), Breeding behavior of the Brewer blackbird. Condor, 54:3-47.

* **Common Grackle:** *Quiscalus quiscula* (Linnaeus).—Common transient and summer resident, local winter resident, in edge habitats. Spring arrival March 2-27 (March 17), autumnal departure October 15-November 14 (October 31). Eggs (5) laid April 11-June 30 (May 5). *Q. q. versicolor* (Vieillot) occurs in Kansas.

Peterson, A., and Young, H. (1950), A nesting study of the bronzed grackle. Auk, 67:466-476.

* **Brown-headed Cowbird:** *Molothrus ater* (Boddaert).—Common transient and summer resident, local winter resident, in woodlands. Eggs (1 to 2 per host nest) laid April 6-July 20 (May 15). Species of birds, nests of which in Kansas have contained eggs or young of cowbirds, are as follows: Mourning Dove, Eastern Kingbird, Eastern Phoebe*, Acadian Flycatcher, Barn Swallow, Horned Lark, Carolina Wren, Rock Wren, Brown Thrasher*, Mockingbird, Catbird, Wood Thrush*, Eastern Bluebird, Yellow-throated Vireo, Bell Vireo*, White-eyed Vireo*, Parula Warbler, Yellow Warbler, Prairie Warbler, Black-and-white Warbler, Kentucky Warbler, Louisiana Waterthrush, Yellow-breasted Chat, Yellowthroat, Eastern

Meadowlark, Western Meadowlark, Red-winged Blackbird*, Orchard Oriole*, Cardinal*, Black-headed Grosbeak, Indigo Bunting*, Blue Grosbeak, Dickcissel*, Pine Siskin*, Rufous-sided Towhee*, Grasshopper Sparrow, Lark Sparrow*, Chipping Sparrow, Field Sparrow*. Asterisk signifies species conspicuously parasitized.

Friedmann, H. (1963), Host relations of the parasitic cowbirds. Bull. U. S. Nat. Mus., 233:ix + 276 pp.

Western Tanager: *Piranga ludoviciana* (Wilson). — Irregular transient in extreme west, in woodlands. Recorded as transient May-September.

* **Scarlet Tanager:** *Piranga olivacea* (Gmelin). — Low-density transient and summer resident in northeast, in mature woodlands. Spring arrival April 24-May 25 (May 9), autumnal departure August 4-October 10 (August 12). Eggs (4) laid May 11-June 20.

* **Summer Tanager:** *Piranga rubra* (Linnaeus).—Common transient and summer resident, in woodlands. Spring arrival April 18-May 18 (April 29), autumnal departure on or prior to October 8. Eggs (4) laid May 21-July 20 (June 5). *P. r. rubra* occurs in Kansas.

Fitch, H. S., and Fitch, V. R. (1955), Observations on the summer tanager in northeastern Kansas. Wilson Bull., 67:45-54.

* **Cardinal:** *Cardinalis cardinalis* (Linnaeus).—Common resident west to 99th meridan, local beyond, in woodlands. Eggs (3-4) laid April 1-September 20, (May 1). *C. c. cardinalis* occurs in Kansas.

Lasky, A. R. (1944), A study of the cardinal in Tennessee. Wilson Bull., 56:27-44.

* **Rose-breasted Grosbeak:** *Pheucticus ludovicianus* (Linnaeus). —Common transient, local summer resident in east, in woodlands. Spring arrival April 19-May 5 (May 2), fall departure September 4-October 1 (September 13). Eggs (3-4) laid May 11-July 10 (June 5). Hybridizes with *P. melanocephalus*.

Ivor, H. R. (1944), Bird study and semi-captive birds: the rose-breasted grosbeak. Wilson Bull., 56:91-104.

* **Black-headed Grosbeak:** *Pheucticus melanocephalus* (Swainson).—Common transient and summer resident in west, in woodlands. Spring arrival April 26-May 11 (May 5), autumnal departure August 17-September 18 (September 2). Eggs (4) laid May 11-July 10 (June 5). *P. m. melanocephalus* occurs in Kansas. Hybridizes with *P. ludovicianus* in west.

Weston, H. S. (1947), Breeding behavior of the black-headed grosbeak. Condor, 59:54-73.

* **Blue Grosbeak:** *Guiraca caerulea* (Linnaeus).—Transient and summer resident chiefly south and west, in riparian and other thickets. Arrives in spring April 23-May 26 (May 13), departs in fall August 15-September 3 (August 27). Eggs (4) laid May 21-June 30. *G. c. caerulea* breeds in eastern Kansas, *G. c. interfusa* Dwight and Griscom in west.

* **Indigo Bunting:** *Passerina cyanea* (Linnaeus).—Common transient and summer resident in east, less common in west, in woodlands. Hybridizes with *P. amoena* in west. Spring arrival April 20-May 15 (May 6), autumnal departure August 23-October 31 (October 1). Eggs (3) laid May 11-August 20 (June 15).

Sibley, C. G., and Short, L. L., Jr. (1959), Hybridization in the buntings (Passerina) of the Great Plains. Auk, 76:443-463.

* **Lazuli Bunting:** *Passerina amoena* (Say).—Uncommon transient, rare summer resident in extreme west, in woodlands. Hybridizes with *P. cyanea* in west. Eggs laid in June and July. Spring arrival May 4-May 24 (May 5).

* **Painted Bunting:** *Passerina ciris* (Linnaeus).—Low-density summer resident throughout southeastern third of state, in woodlands. Spring arrival April 30-May 25 (May 9). Eggs laid June, July. *P. c. pallidior* Mearns occurs in Kansas.

Parmelee, D. F. (1959), The breeding behavior of the painted bunting in southern Oklahoma. Bird-Banding, 30:1-18.

* **Dickcissel:** *Spiza americana* (Gmelin). — Common transient and summer resident but local in west, in woodland-grassland edge. Spring arrival April 17-May 10 (May 4), autumnal departure September 7-October 11 (September 18). Eggs (4) laid May 1-July 10 (May 5).

Gross, A. O. (1921), The dickcissel (Spiza americana) of the Illinois prairies. Auk, 38:163-184.

Evening Grosbeak: *Hesperiphona vespertina* (Cooper).—Irregular, usually low-density but frequently conspicuous, winter resident, in woodlands. Recorded variably within period October 12-May 13 (exceptionally in August). *H. v. vespertina* occurs in Kansas.

Purple Finch: *Carpodacus purpureus* (Gmelin).—Low-density transient, winter visitant, chiefly east, in woodlands. Recorded variably October 3-April 30. *C. p. purpureus* occurs in Kansas.

Blake, C. H. (1955), Notes on the eastern purple finch. Bird-Banding, 26:89-116.

Cassin Finch: *Carpodacus cassinii* Baird.—Irregular low-density winter visitant in west, in woodlands (open coniferous plantations, deciduous stands). Notable flock occurred Hays, Ellis County, December 28, 1960-April 28, 1961, specimens taken March and April. Another flock occurred January 14-April 20, 1961, at Dodge City, Ford County (Mrs. A. R. Challans).

House Finch: *Carpodacus mexicanus* (Müller).—Common winter resident, presumed summer resident locally, in western sector, in open woodlands. Vagrant in east (Cloud County, February-March). *C. m. frontalis* (Say) occurs in Kansas.

Evenden, F. G. (1957), Observations on nesting behavior of the house finch. Condor, 59:112-117.

Pine Grosbeak: *Pinicola enucleator* (Linnaeus).—Irregular winter resident in woodlands. Conspicuous in winter of 1960-61, when recorded November 24-April 30 in Topeka. Specimens from Hays, Ellis County, show *P. e. leucura* (Müller) occurs in Kansas.

Common Redpoll: *Acanthis flammea* (Linnaeus). — Irregular, low-density winter visitant, chiefly east, in woodlands. Recorded November 18-March 25. *A. f. flammea* occurs in Kansas.

* **Pine Siskin:** *Pinus spinus* (Wilson).—Common, irregular transient and winter resident, irregular local summer resident, in woodlands. As transient generally arrives after mid-October, departs by late May. Eggs (4) laid March 11-May 20 (May 5). *S. p. pinus* occurs in Kansas.

Weaver, R. L. and West, F. H. (1943), Notes on the breeding of the pine siskin. Auk, 60:492-504.

* **American Goldfinch:** *Spinus tristis* (Linnaeus).—Common resident in woodlands and edge. Eggs (4) laid June 20-September 10 (August 5). *S. t. tristis* occurs in Kansas.

Nickell, W. P. (1951), Studies of habitats, territory and nests of the eastern goldfinch. Auk, 68:447-470.

* **Red Crossbill:** *Loxia curvirostra* Linnaeus.—Irregular winter resident, in woodlands. Recorded between September 25 and May 1, except for one instance of breeding (Hyde, 1917) in Shawnee County. In approximate order of decreasing frequency (Tordoff, 1956:350; recent specimens support the generalization), *L. c. benti* Griscom, *L. c. bendirei* Ridgway, *L. c. minor* (Brehm), *L. c. stricklandi* Ridgway, and *L. c. sitkensis* Grinnell occur in Kansas.

Tordoff, H. B. (1954), Social organization in a flock of captive, nonbreeding red crossbills. Condor, 56:346-358.

White-winged Crossbill: *Loxia leucoptera* Gmelin. — Rare, irregular winter visitant. Specimens only from Ellis and Douglas counties. *L. l. leucoptera* occurs in Kansas.

Green-tailed Towhee: *Chlorura chlorura* (Audubon). — Transient, purportedly common in west, rare winter visitant in east.

* **Rufous-sided Towhee:** *Pipilo erythrophthalmus* (Linnaeus).— Common transient and winter resident, low-density summer resident in east, in woodlands. Eggs (4) laid April 21-August 10 (May 5). *P. e. erythrophthalmus* breeds in Kansas, *P. e. arcticus* (Swainson) is transient in much of state, *P. e. montanus* Swarth transient in extreme west.

Davis, J. (1957), Comparative foraging behavior of the spotted and brown towhees. Auk, 74:129-166.

* **Lark Bunting:** *Calamospiza melanocorys* Stejneger.—Common transient and summer resident in west, rare transient and summer resident in east, in grassland and open scrub. Spring arrival May 5-14 (May 10). Eggs (4) laid May 21-June 20.

Savannah Sparrow: *Passerculus sandwichensis* (Gmelin).—Common transient, rare winter resident, in grassland. Fall arrival August 29-September 22 (September 9), departure October 8-December 1 (October 20); spring arrival February 21-April 16 (April 6), departure May 7-June 3 (May 13). *P. s. savanna* (Wilson), *P. s. oblitus* Peters and Griscom, and *P. s. nevadensis* Grinnell occur in Kansas.

* **Grasshopper Sparrow:** *Ammodramus savannarum* (Gmelin).— Common transient, local summer resident, in grasslands. Spring arrival April 12-May 11 (April 29), fall departure August 20-October 6 (August 31). Eggs (5) laid May 1-June 30. *A. s. perpallidus* (Coues) occurs in Kansas.

Smith, R. L. (1959), The songs of the grasshopper sparrow. Wilson Bull., 71:141-152.

Baird Sparrow: *Ammodramus bairdii* (Audubon).—Uncommon transient, in grasslands. Several specimens: two Lane County (April and August), three Cowley County (April and October), five Sherman County (September).

Cartwright, B. W., Short, T. M., and Harris, R. D. (1937), Baird's sparrow. Trans. Royal Canadian Inst., 21:153-197.

Le Conte Sparrow: *Passerherbulus caudacutus* (Latham). — Common transient, local winter resident (Douglas, Woodson, Cherokee counties), in grasslands. Recorded September 30-May 11.

Walkinshaw, L. H. (1937), Leconte's sparrow breeding in Michigan and South Dakota. Auk, 54:309-320.

* **Henslow Sparrow:** *Passerherbulus henslowii* (Audubon).—Uncommon transient, local summer resident (Shawnee, Douglas, Morris, and Anderson counties) in grasslands. Spring arrival April 14-30 (April 22), fall departure in October. Eggs (5) laid May, June. *P. h. henslowii* occurs in Kansas.

Hyde, A. S. (1939), The life history of Henslow's sparrow, Passerherbulus henslowi (Audubon). Misc. Publ. Mus. Zool. Univ. Michigan, No. 41.

Sharp-tailed Sparrow: *Ammospiza caudacuta* (Gmelin).—Rare transient in east, in heavy riparian edge. Recorded late April and September 26-October 14. *A. c. nelsoni* (Allen) occurs in Kansas.

Woolfenden, G. E. (1956), Comparative breeding behavior of *Ammospiza caudacuta* and *A. maritima*. Univ. Kansas Publ. Mus. Nat. Hist., 10:45-75.

Vesper Sparrow: *Pooecetes gramineus* (Gmelin). — Common transient, possible local summer resident in west, in grasslands. Recorded March 21-May 18, September 4-November 22, but midwinter once (Shawnee County) and midsummer once (Morton County). *P. g. gramineus* occurs in eastern Kansas, *P. g. confinis* Baird in west.

Dawson, W. R., and Evans, F. C. (1960), Relation of growth and development to temperature regulation in nestling vesper sparrows. Condor, 62: 329-340.

* **Lark Sparrow:** *Chondestes grammacus* (Say).—Common transient and summer resident, irregular and local in winter, in woodland-grassland edge. Spring arrival March 29-April 21 (April 18), fall departure September 13-October 16 (October 12). Eggs (4) laid May 1-July 20 (May 25). *C. g. grammacus* occurs in eastern Kansas, *C. g. strigatus* Swainson in west.

Rufous-crowned Sparrow: *Aimophila ruficeps* (Cassin).—Probable local summer resident in favorable years in southwest. Two records, Comanche and Morton counties, June 7, and May 21. *A. r. eremoeca* (Brown) occurs in Kansas.

Bachman Sparrow: *Aimophila aestivalis* (Lichtenstein).—Springtime vagrant in east. Two records, Lake Quivira, Wyandotte and Johnson counties, April 26, 1948, and April 24, 1949. *A. e. illinoensis* (Ridgway) occurs in Kansas.

* **Cassin Sparrow:** *Aimophila cassinii* (Woodhouse).—Common summer resident south and west of Logan and Comanche counties, in open scrub. Eggs (4) laid May, June, probably July.

Black-throated Sparrow: *Amphispiza bilineata* (Cassin).—One specimen (KU 31356) from 4 miles north, 3 miles east, Garden City,

Finney County, November 25, 1952. *A. b. opuntia* Burleigh and Lowery occurs in Kansas.

Sage Sparrow: *Amphispiza belli* (Cassin).—Winter resident in southwest, in xeric scrublands. Records from Morton and Seward counties, November-January. *A. b. nevadensis* (Ridgway) occurs in Kansas.

White-winged Junco: *Junco aikeni* Ridgway. — Transient and winter resident in west, at times reportedly common, in woodland edge. Specimens from Wallace, Hamilton, Ellis, and Morton counties.

Slate-colored Junco: *Junco hyemalis* (Linnaeus).—Common transient and winter resident, in woodlands. Fall arrival September 23-October 19 (October 10), spring departure April 16-May 2 (April 20). *J. h. hyemalis* and *J. h. cismontanus* Dwight occur in Kansas.

Oregon Junco: *Junco oreganus* (Townsend).—Common transient and winter resident in west, less numerous in east, in woodlands. Fall arrival September 25-October 31 (October 20), spring departure April 2-27 (April 10). *J. o. montanus* Ridgway and *J. o. mearnsi* Ridgway occur in Kansas.

Sabine, W. S. (1959), The winter society of the Oregon junco: intolerance, dominance and the pecking order. Condor, 61:110-135.

[**Gray-headed Junco:** *Junco caniceps* (Woodhouse).—Sight record at Dodge City, January 13, 1962; Mrs. A. R. Challans.]

Tree Sparrow: *Spizella arborea* (Wilson).—Common transient and winter resident, in woodlands. Fall arrival October 7-30 (October 21), spring departure April 1-14 (April 4). *S. a. arborea* occurs in eastern Kansas, *S. a. ochracea* Brewster throughout state.

Sargent, T. D. (1959), Winter studies on the tree sparrow, Spizella arborea. Bird-Banding, 30:27-37.

* **Chipping Sparrow:** *Spizella passerina* (Bechstein).—Common transient, local summer resident, in eastern half of state. Spring arrival March 6-April 29 (April 23), fall departure October 3-November 14 (October 20). Eggs (4) laid May (probably also June, July). *S. p. passerina* occurs in Kansas.

Walkinshaw, L. H. (1944), The eastern chipping sparrow in Michigan. Wilson Bull., 56:193-205.

Clay-colored Sparrow: *Spizella pallida* (Swainson).—Common transient, possible summer resident in west, in open woodlands. Spring arrival April 3-May 3 (April 29), departure May 5-19 (May

10); autumnal arrival August 4-October 12 (September 23), departure September 20-October 19 (October 18). Possibly breeds in extreme west (Trautman, 1964).

Brewer Sparrow: *Spizella breweri* Cassin.—Common transient, possible summer resident, in west, in open scrublands. Specimens and sight records Morton and Finney counties, April, May, July, sight record Shawnee County, April 30, 1961. *S. b. breweri* occurs in Kansas.

* **Field Sparrow:** *Spizella pusilla* (Wilson).—Common transient and summer resident, rare in winter, in grassland edge. Spring arrival March 4-April 28 (April 7), fall departure October 5-November 12 (October 30). Eggs (4) laid April 21-September 10 (May 5). *S. p. arenacea* Chadbourne occurs in most of Kansas, intergrading in east with *S. p. pusilla*.

Walkinshaw, L. H. (1939), Nesting of the field sparrow and survival of the young. Bird-Banding, 10:107-114; 149-157.

Harris Sparrow: *Zonotrichia querula* (Nuttall).—Common transient and winter resident, most numerous south-central sector, in understory edge of woodlands. Fall arrival October 3-27 (October 15), spring departure May 1-June 6 (May 11).

White-crowned Sparrow: *Zonotrichia leucophrys* (Forster).—Common transient and winter resident, in understory edge of woodlands. Fall arrival September 28-October 19 (October 12), spring departure May 3-30 (May 9). *Z. l. leucophrys* and *Z. l. gambelii* (Nuttall) occur in Kansas.

Blanchard, B. (1941), The white-crowned sparrows of the Pacific seaboard. Univ. California Publ. Zool., 46:1-178.

White-throated Sparrow: *Zonotrichia albicollis* (Gmelin).—Common, low-density transient and winter resident, chiefly east, in understory edge of woodlands. Autumnal arrival September 27-October 29 (October 19), spring departure May 1-20 (May 9).

Borror, D. J. (1948), Analysis of repeat records of banded white-throated sparrows. Ecol. Monogr., 18:411-430.

Fox Sparrow: *Passerella iliaca* (Merrem).—Common, low-density transient and winter resident, chiefly east, in understory of woodlands. Autumnal arrival October 9-27 (October 15), spring departure March 19-April 19 (April 4). *P. i. iliaca* and *P. i. zaboria* Oberholser occur in Kansas.

Lincoln Sparrow: *Passerella lincolnii* (Audubon).—Common transient, uncommon winter resident, in mesic substory of woodlands. Fall arrival September 5-October 13 (October 1), de-

parture October 13-27 (October 25); spring arrival April 4-29 (April 17), departure May 2-19 (May 6). *P. l. lincolnii* occurs throughout Kansas, *P. l. alticola* Miller and McCabe in extreme west.

Swamp Sparrow: *Passerella georgiana* (Latham). — Common transient and uncommon winter resident, chiefly east, in heavy brush near water. Fall arrival from September 24 through October, departure in spring April 5-May 21 (May 9). *P. g. georgiana* and *P. g. ericrypta* (Oberholser) occur in Kansas.

* **Song Sparrow:** *Passerella melodia* (Wilson).—Common transient and winter resident, summer resident at least northeast, in heavy cover near water. Autumnal arrival September 1-October 22 (October 7), spring departure April 6-May 9 (April 26). *P. m. melodia* (*sensu* Marshall, 1964:451) occurs in Kansas.

Nice, M. M. (1937, 1943), Studies in the life history of the song sparrow. I and II. Trans. Linn. Soc. New York, 4:246 pp.; 6:328 pp.

McCown Longspur: *Rhynchophanes mccownii* (Lawrence).—Common to uncommon transient and winter resident in west, rare in east, in short grasslands. Fall arrival October 29-November 18, spring departure February 1-April 3 (February 17).

Mickey, F. W. (1943), Breeding habits of McCown's longspur. Auk, 60:181-209.

Lapland Longspur: *Calcarius lapponicus* (Linnaeus).—Common transient and winter resident, in grasslands. Fall arrival November 1-26 (November 11), spring departure March 1-April 12 (March 12). *C. l. lapponicus* and *C. l. alascensis* Ridgway (less commonly) occur in Kansas.

Irving, L. (1961), The migration of Lapland longspurs to Alaska. Auk, 78:327-342.

Smith Longspur: *Calcarius pictus* (Swainson).—Uncommon transient and local winter resident, more numerous in west, in grasslands. Present October 7-April 23.

* **Chestnut-collared Longspur:** *Calcarius ornatus* (Townsend).—Common transient and winter resident in west, uncommon in east, in grasslands. Present October 5-April 8. Former summer resident near Hays, Ellis County (specimens from 1871).

Harris, R. D. (1944), The chestnut-collared longspur in Manitoba. Wilson Bull., 56:105-115.

Snow Bunting: *Plectrophenax nivalis* (Linnaeus).—Winter visitant at infrequent and irregular intervals. No specimens since 1879 from Kansas. *P. n. nivalis* occurs in Kansas.

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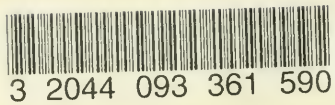
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